# CHAPTER 5: ACTIVE TRANSPORTATION

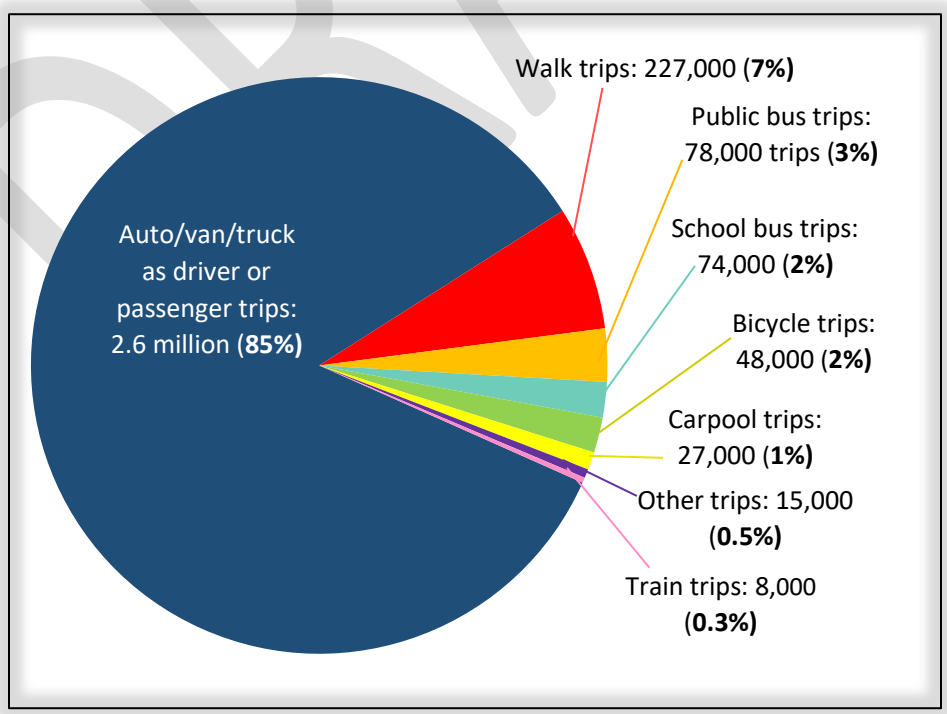
Active transportation is a goal of the MTP because of the importance of providing viable multimodal options and because it supports positive public health and safety outcomes, among other benefits. Active transportation is a term that refers to human-powered transportation modes, such as walking and bicycling. Although, transit is also considered 'active transportation' because it usually involves a pedestrian or bicycle trip to get to or from the transit trip. This chapter considers transit but focuses primarily on pedestrian and bicycle travel. Transit is addressed in the Optimized Mobility chapter (Chapter 4). Closing gaps that exist in the transportation network for these modes and further developing their infrastructure, as well as improving travel safety for these modes, is critical for a well-functioning active transportation system for our region.

## 5.1 Pedestrian and Bicycle Travel Conditions

### *Mid-Region Household Travel Survey*

Trips taken by walking and bicycling make up only a modest share of the total trips taken in the region. The latest Mid-Region Household Travel Survey (2014), which is the most comprehensive survey of residents in the region, shows that seven percent of trips are made by walking, and two percent of trips are made by bicycling. There are important benefits associated with traveling by these modes, including improved public health outcomes, economic resiliency, and reduced reliance on single-occupancy vehicles. Currently, the built environment has, for the most part, not been designed to encourage walking and biking. New policies and investments are needed to create vibrant places where people want to be and where they feel safe walking and biking.

**Figure 5-1: All Trips by Mode, Household Travel Study**



### *Short Trips*

Nineteen percent of driving trips are less than 2.5 miles, which is approximately a 15-minute bicycle ride. Eleven percent of driving trips are under a mile, which is approximately a 20-minute walk. Replacing these short trips with walking or biking could have a major impact according to the Environmental Protection Agency 2015 article (EPA-420-F-15-021) published by the Office of Transportation and Air Quality.

> "Car trips of under a mile add up to about 10 billion miles per year, according to the 2009 U.S. National Household Transportation Survey (NHTS). That's like the entire population of Chicago driving to Las Vegas and back! If we all chose to power half of these short trips with our feet instead of petroleum, assuming an average fuel economy of 22 mpg and an average fuel price of $2.50/gallon, we would save about $575 million in fuel costs and about 2 million metric tons of CO2 emissions per year. That's like taking about 400,000 cars off the road each year. The total financial savings are even bigger — almost $900 million dollars — when you include savings on maintenance and tire replacement."

## a. Potential Mode of Travel

Despite the general dependence on single-occupancy vehicle travel, there are indications that walking and bicycling could be a more common, and complementary, way to get around. For instance, of the households participating in the Mid-Region Household Travel Survey, 56 percent reported having bicycles, showing that biking as an activity (or intended activity) is widespread. Moreover, 20 percent of households include someone who takes some form of walking or bicycle trip on a regular basis.

### *Choosing Active Modes of Travel*

In addition, a public questionnaire conducted as part of the development of the *2040 MTP,*[1] asked people if they used other types of transportation besides their primary mode, and 34 percent indicated they walked, and 21 percent bicycled. These statistics, combined with the number of short trips people make, make a good case for the potential to replace at least some trips with walking and biking. Focusing on increasing the frequency of people choosing active modes, rather than, for instance, foregoing all single occupancy vehicle travel, could be a more realistic strategy for the region.

This public questionnaire also asked peoples' opinions about their most common transportation concern. Safety from traffic was reported as the most common concern for bicyclists. Open-ended responses also revealed that discontinous bicycle facilties are a large concern. For walking, the most common issue is that distances are too far and people have safety concerns related to traffic and sidewalk conditions. See figures on the next page.

### *Gender Equity Concerns*

The design of cities and communities plays a critical role in personal safety and impacts the way that people engage with, move through, and experience their environment. Access to transportation options (driving, walking, biking, and transit) that are safe, convenient, and affordable can positively impact a person's everyday life. Men, women, and children encounter communities in different ways and have different design and safety needs. For women and children, design elements such as adequate street and sidewalk lighting, well-surveilled parking, and clear sight lines in public spaces may be important factors in how safe an area feels to walk or bike.

[1] A report of the 2040 MTP Questionnaire results can be found on MRCOG's website: https://nm-mrcog.civicplus.com/DocumentCenter/View/3951/Connections-2040-Questionnaire-Report-PDF

These everyday design details come to light when reviewing data about men's and women's transportation use. Women walk fewer steps each day than men, largely because of personal safety.[2] They also bicycle less than men; women account for 29.1percent of bicycle trips vs. 70.9 percent for men[3]. Several studies and research have identified a variety of reasons for this bicycling gap, including but not limited to a lack of safe bicycle infrastructure, social pressures, complex trip patterns (women are often responsible for domestic chores and shuttling others), and harassment.

**Figure 5-2: Connections MTP Survey Results for Transportation Modes**

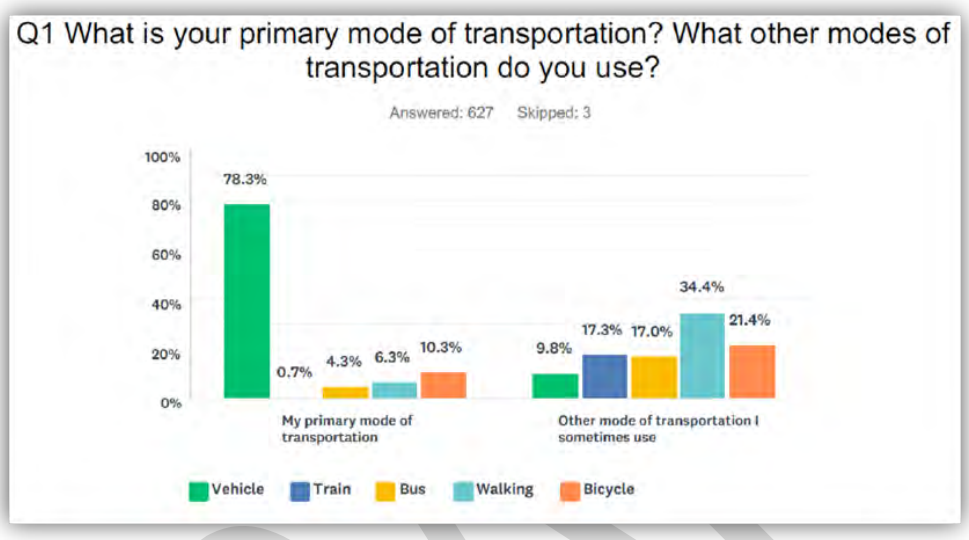
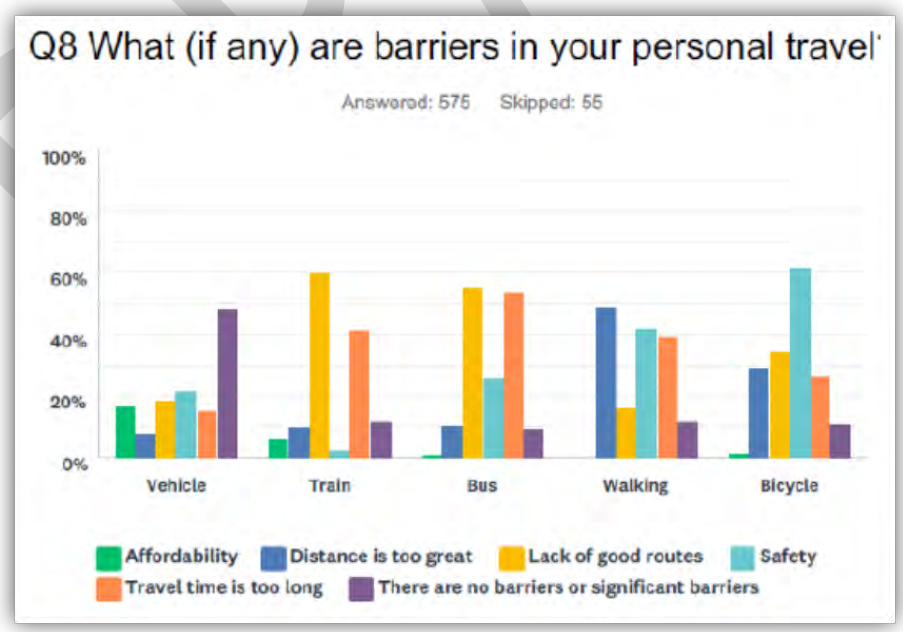



**Figure 5-3: Top Reported Issues for All Transportation Modes, *2040 MTP***




[2] Shadwell, Talia. (2017). Paying to stay safe: why women don't walk as much as men. The Guardian
[3] US Census Bureau, 2011-2015 American Community Survey 5-year estimates

### *Increasing Bicycle Ridership*

In bicycling, women have been identified as a barometer of safer bicycling conditions[4]. Cities that invest in protected or separated bicycle infrastructure experience increases in female ridership. Minneapolis saw an increase in female ridership after investing in protected bicycling infrastructure.[5] New York City also saw an increase in female ridership along corridors with protected bike lanes.[6] Protected or separated bicycling facilities not only provide a safer space for bicyclists, but they also provide physical separation from traffic and vehicles and more protection from potential verbal harassment.[7]

> **The same could be true for the everyday design of our streets by focusing on gender parity in walking, biking, and transit use as an explicit goal in transportation investments. By including women's safety concerns in the design of our streets and built environments, safety is improved not only for women, but also children and men. In effect, everyone wins.**

*Four Types of Bicyclists*

Research based in Portland, Oregon, and expanded nationallygroups Americans into four categories of bicyclists based on their perceptions of bicycling: 'Strong and Fearless', 'Enthused and Confident', 'Intersted but Concerned', and 'No Way No How' as illustrated in the graphic below.

**Figure 5-4: Four Types of Bicyclists from City of Fresno Active Transportation Plan**


[4] Baker, Linda. (2009). Getting more bicyclists on the road. The Scientific American

[5] Reeves, H. (2012). "Spokes & soles // As infrastructure improves, more Twin Cities women bike," Southwest Journal, 11 June 2012

[6] Teferra, Roha. 2011. Protected bike lanes means more female ridership.

[7] Clabots, Barbara. (2016). Even in the most bike-friendly states, women are left behind. Yes Magazine

## a. Approaches to Changing Behavior

Design plays a critical role in whether a person is going to walk, bike, or take transit to daily desinations such as work, school, shopping, medical appointments, or recreation. In addition to design, other actions can help attract more people to walking and bicycling including education, encouragement, and enforcement.

### *Education and Outreach*

With the availability and connectivity that smart phones offer drivers, the opportunity for distracted driving has increased, especially with regard to texting and talking on the phone. Therefore, a focus on trying to discourage this driver behavior is paramount. Behavior campaigns are one way to educate people about using our public roadways. This critical piece is meant to alter attitudes and in turn improve behavior toward other roadway users – especially pedestrians, bicyclists, and transit riders. Another important facet of behavior campaigns is to focus on younger drivers in order to change future driver attitudes and behavior for years to come.

#### *Combinging Outreach with Enforcement*

Research and studies have found that road safety campaigns or public service announcements (PSAs) ***alone*** do not have a significant impact on driver attitudes or behavior and do not usually result in a reduction of deaths and injuries. However, a 2004 World Health Organization (WHO) report found that road safety campaigns intended to change driver behavior were most successful when used in coordination with legislation and law enforcement. Road safety campaigns working toward increasing seat belt use and decreasing drunk driving, such as “Click it or Ticket” and NMDOT’s “ENDWI,” have been effective. These marketing campaign examples were also tied to targeted law enforcement campaigns, which helped make them more successful. Other high-profile campaigns that have had an impact in our region include Look for Me Superblitz and 100 Days & Nights of Summer traffic safety.

Behaviors are difficult to change and need to be done in concert with other tactics, yet our society *has* implemented successful behavior change campaigns. For example, we have seen substantial changes in seatbelt use, and significant reduction in the number of people smoking cigarettes despite their addictive qualities. Generally speaking, fewer people engage in drinking and driving and are well aware of the consequences. Pedestrian, bicyclist, and driver behaviors can also change, and more people can learn the rules of the road for all modes of travel. Our understanding of different types of streets such as roundabouts, bicycle boulevards, pedestrian crossing signals, and shared roads may be slow to change, but has evolved over the last 10 years as we see more of this type of infrastructure. As with enforcement, education and encouragement campaigns can help raise awareness of new infrastructure.

### *Traffic Enforcement*

While traffic enforcement has always been an important aspect of safety actions plans, traffic enforcement with data driven information will allow law enforcement to allocate limited resources to efforts that will be most effective and responsive to prevailing safety conditions. **This will require not only continued coordination with law enforcement, but also continued evolution of data collection to better inform safety needs and solutions.** Stronger law enforcement to combat dangerous driving behavior has potential to greatly impact and reduce the frequency of fatalities and serious injuries in our roadways. Our police force does not have the capacity to be everywhere all the time. A data driven approach enables law enforcement to target key issue areas to work toward improvement and employ intelligent transportation system options in places where law enforcement cannot be.

With new technologies and focused enforcement efforts, the job of making sure we are all driving safely can be improved. Certain types of interventions are far more effective than others and understanding what the data is telling us in order to target our efforts can make a world of difference in the safety of our roadways. Some strategies for targeted enforcement are provided in the *Regional Transportation Safety Action Plan* (RTSAP).

*Dangerous Drivers*

Enforcement efforts should be targeted toward the most dangerous driving behaviors and can also include an informational element; for example, officers can be part of spreading messages about safety such as how high-speed crashes are more likely to result in death, which is why they are focusing on enforcing speed limits.

### *Encouraging Active Transportation*

There are a number of existing efforts underway in the AMPA that encourage people to walk and bike more. Officially organized efforts such as the City of Albuquerque's annual Bike to Work Day event and bike rodeo program, the PACE bike program, the Healthy Here initiative's wellness referral program, Prescription Trails, and Rio Metro advertising campaigns aim to encourage people to bicycle and take the bus or train for more trips. There are also grassroots efforts that have been successful for the same purpose, including Slow Roll 505 and CiQlovía. Encouragement efforts that are successful in other regions may have potential here including Walk and Ride to School programs and strong participation from the private sector in TDM efforts.

## b. Non-Motorized Counts Data

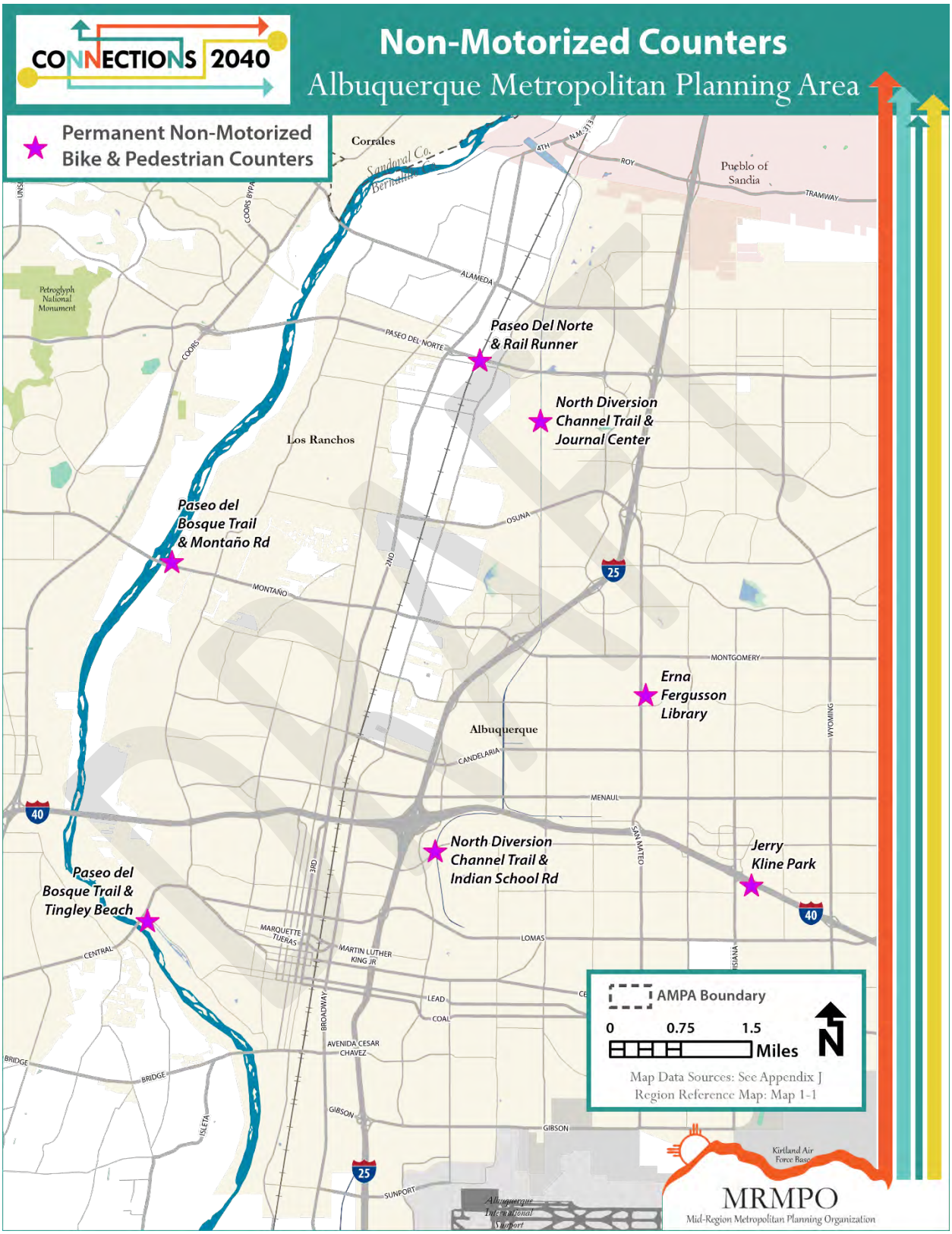
MRMPO has a long-standing counts program for vehicular travel and produces annual traffic flow maps for the region. Over the past few years, MRMPO has been building-out a non-motorized counts program using short duration counts, permanent counters, and Strava data (user-collected data using a smart phone app) to supplement each type of count.

Accurately capturing pedestrian and bicyclist data is vital to improving these modes of travel. Sometimes this can be a difficult task because of factors like weather, safety perception, and quality of the infrastructure that could impact a person's decision to walk or bicycle. Based on these facts, collecting substantial non-motorized count data for these modes to enable a rate calculation is difficult. However, collecting data on walking and biking is essential to getting a better understanding of the use of these modes, safety issues, and needed improvements. Indeed, demand for and development of technologies by both agencies, and the public, that can help develop more accurate and robust non-motorized counts is growing.

### *Permanent and Short Duration Counts*

MRMPO manages seven permanent counters on different trails throughout the Albuquerque metro area. These permanent counters collect both pedestrian and bicyclist activity and provide crucial data for these activities on the trail network. In addition to these permanent counters, short-duration counts are collected via a video screen line approach based on national best practices. All pedestrians and bicyclists passing a designated line are counted, which is similar in approach to tube counts for motor vehicles. MRMPO collects such data at various locations from May through September, one weekday at peak AM and PM hours, and one weekend day from 11am-1pm. A map showing these locations is provided below.

**Map 5-1: Permanent Counter Locations**



### *Latent Demand for Bicycle Facilities*

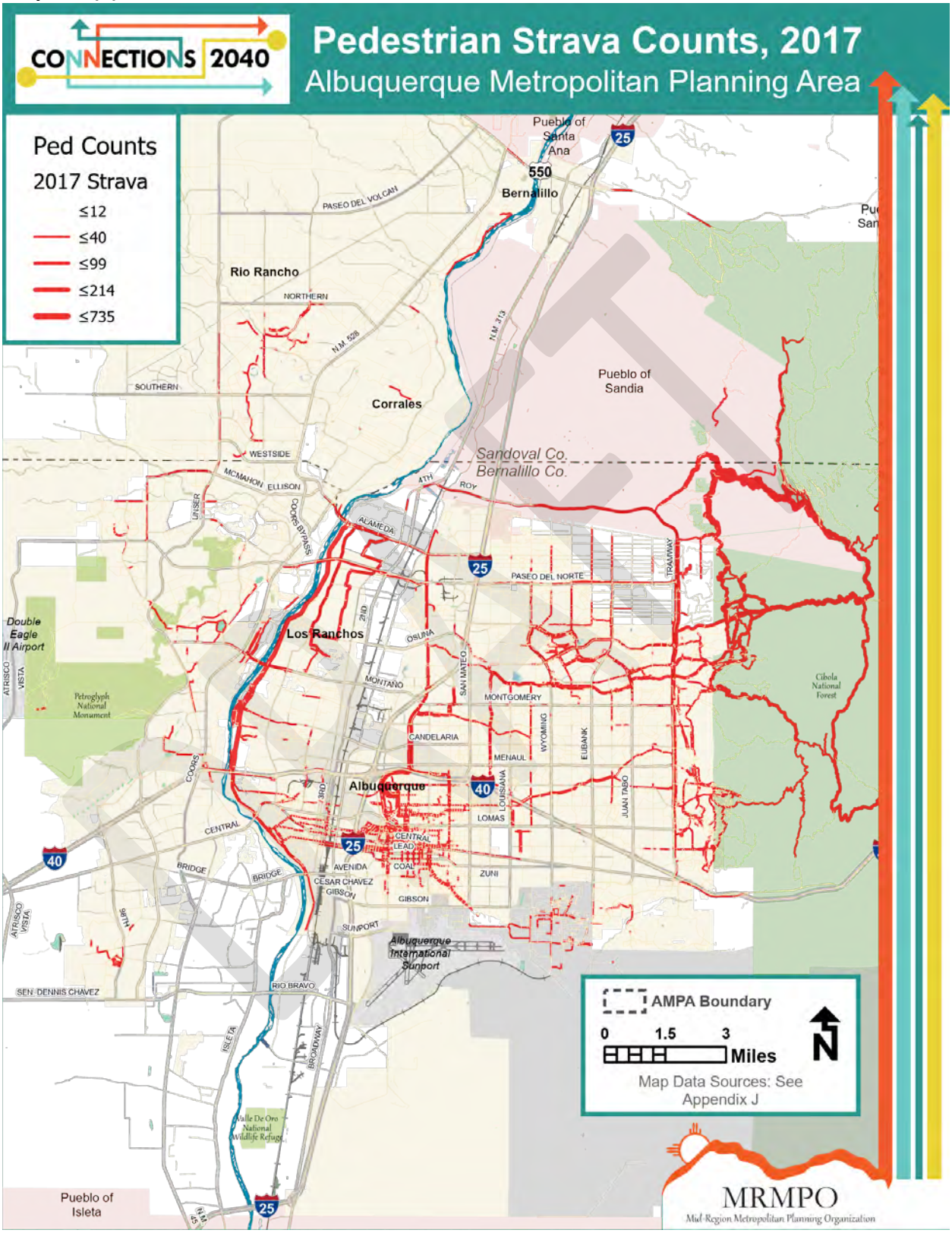
MRMPO typically collects short duration counts for projects that are specifically meant to enhance bicyclist and/or pedestrian activity. For example, with the addition of a new buffered bicycle lane, MRMPO would collect counts before and after the lane was added on a roadway**. This kind of data is important because it generally shows that bicycling on a particular roadway increases when a dedicated facility is added.** This means that there is latent demand for such facilities and likely the increase is in "interested but concerned" riders (mentioned earlier), who wouldn't ride before there was a facility, but will if infrastructure is put in place that helps them feel safer while riding. The analysis can help make the argument that more bicycle facilities are needed, even when opponents of a new bicycle facility argue that there is not enough demand for such facilities.

### ***Strava Metro Data***

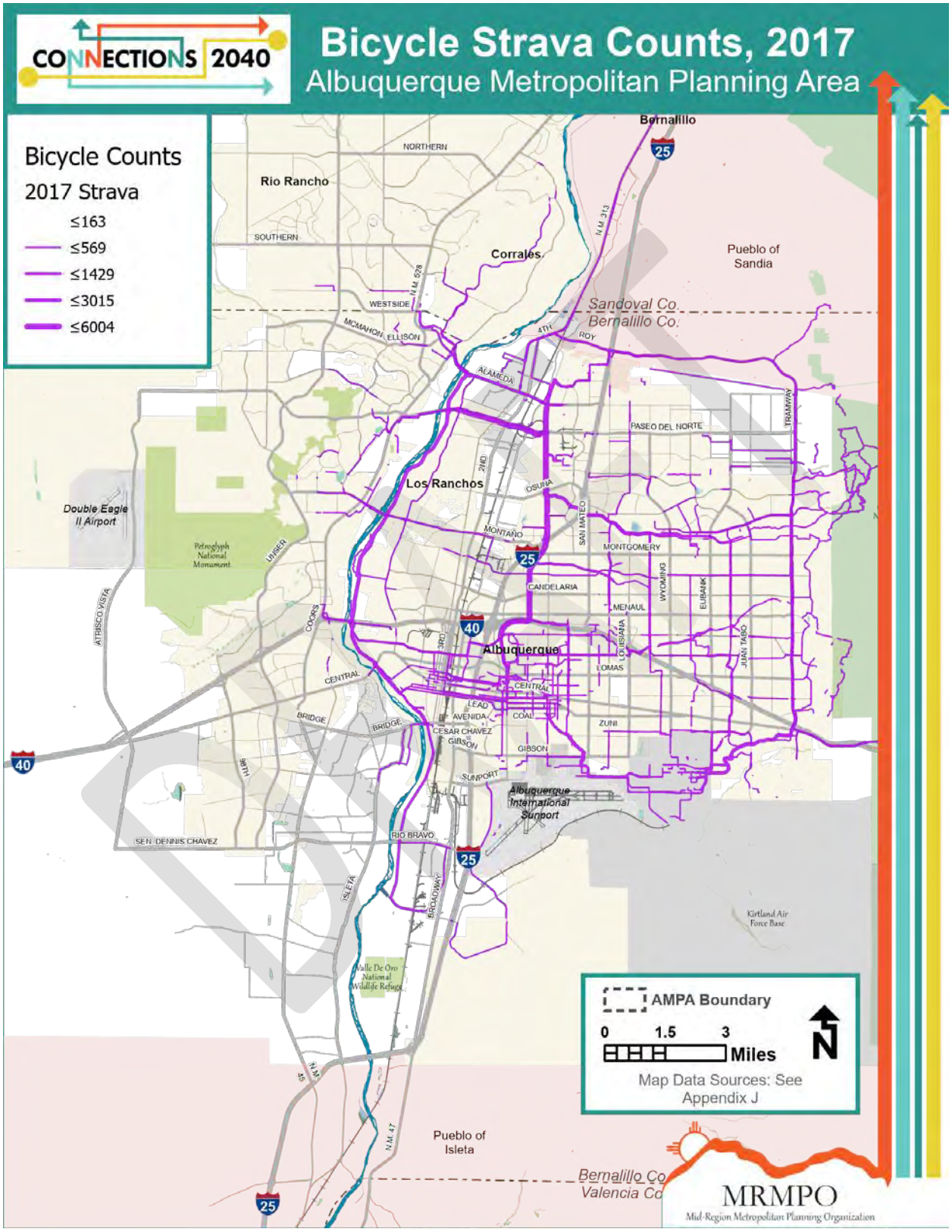
MRMPO purchases bicycling and pedestrian data from Strava Metro. People can track their cycling, walking, and running activity with a Strava application on a smart phone or with a GPS device. Users record their speed and route. Strava removes all identifying information from the users and aggregates the data to a linear street and trail map.

Strava trips represent only a small segment of the total usage of the total trips taken by the walking and cycling community. The data are biased toward people who choose to use Strava, an application that helps measure fitness and compare cycling speeds and distances, and is therefore used more by people walking, running, and biking for fitness than for transportation. Nevertheless, this information is helpful to show the relative usage on streets and trails for this segment of the population. Strava data can also be correlated with permanent count data to provide estimate counts for an entire area surrounding a permanent counter.

**Map 5-2 (a): Strava Metro Pedestrian Counts, 2017**



**Map 5-2 (b): Strava Metro Bicycle Counts, 2017**



### *Bike Share Data*

Albuquerque's bike share started in downtown as a pilot program called BICI, an abbreviated form of the Spanish word for bicycle—bicicleta. The DowntownABQ MainStreet Initiative and the Mid-Region Council of Governments (MRCOG) started the program and used a bike share vendor to provide the shared bikes. The pilot program operated from May 15, 2015 until January 14, 2018, with 75 bicycles and 15 stations throughout downtown. Starting in May 2016, the program moved under the management of the Rio Metro Regional Transit District (RMRTD) to expand and grow the program beyond downtown. This pilot program had over 10,000 trips taken by over 2,400 people.

Rio Metro received two federal grants to implement a permanent and expanded program. The new program launched as Pace ABQ Bike Share with 200 bicycles and 30 stations on April 19, 2018. Stations are located throughout downtown and the Nob Hill areas. In June 2018, an additional 50 bicycles and 10 stations were added to the network. The program anticipates another expansion in phases throughout 2020 to create a network of 500 bicycles and 100 stations.

The bike share program collects trip, trip duration, gender, zip code, and more importantly GPS data, on routes riders take. **These datasets are useful in future bicycle planning efforts as planners gain a better understanding of exactly where riders are bicycling and in turn where limited funding should be dedicated to expanding and improving connections among existing bicycling facilities.**

### *Bike to Work Day Data*

Each year, MRCOG partners with the City and other local entities to plan and implement a Bike to Work Day (BTWD) event. BTWD celebrates and encourages people to try commuting by bicycle for the day. The event occurs as part of a national campaign called National Bike Month, which occurs annually in May. Albuquerque's event features about 13 to 15 cycle stops where riders can stop on their way to work to meet other bicycle commuters, receive free bicycle safety promotional materials, and take MRCOG's BTWD survey, which gauges bicyclists' opinions about bicycling in Albuquerque.

The survey was designed to examine public perceptions of Albuquerque's bicycle-friendliness. It helps better understand bicyclist needs and gather general information about bicycling in the greater Albuquerque area. The information is used to help understand how to make Albuquerque a more bicycle-friendly community. The BTWD survey serves as a snapshot in time to track changes. Highlights of the 2018 BTWD survey include:

- When planning a route, respondents prefer bicycle lanes and routes with fewer and slower cars.
- Over two-thirds of survey respondents reported that bicycling in the greater Albuquerque area was "getting better" because of improved and expanded bicycle infrastructure such as protected and buffered bike lanes, green "paint", bike boulevards, and flex posts.
- For the third year in a row, respondents that identified that bicycling was "staying the same" or "getting worse" felt that poor driver behavior (including aggressive behavior, inattentive driving, speeding, and running lights) was the cause.
- For the third year in a row, bicycling for exercise or recreation was the most common bicycle trip purpose.
- Just over half of respondents reported bicycling to work one to five or more times per week.
- Respondents responded favorably to physical improvements to the bicycle network.

## c. Safety Concerns

The region's safety data does not fully reveal what people need to feel safe from traffic. However, it does provide useful information. Overall, the data indicate that walking in New Mexico is much less safe than in other states. New Mexico and the City of Albuquerque frequenty rank as one of the highest states and cities for pedestrian fatalities per capita. Bicyclist fatalites consistently rank in the top 10 compared to other states.

New Mexico consistently has one of the highest pedestrian fatality rates per capita in the United States. Based on preliminary data from the Governors Highway Safety Association, New Mexico ranked number one for pedestrian fatalities per 100,000 population.[1]

### *Federal Highway Administration (FHWA) Focus City and Focus State*

These challenging statistics led the FHWA to identify Albuquerque as a "focus city" and New Mexico a "focus state" for pedestrian safety interventions. The FHWA's focus city effort has led to a better examination of crash data related to pedestrians and bicyclists. Pedestrian crashes tend to cluster around major transit lines and to some extent bicyclist crashes do as well. Often the best transit routes are on roadways that do not include bikeways, which disrupts an important link between the two modes.

### *Crash Data from NMDOT*

MRMPO staff acquires crash data from the New Mexico Department of Transportation - Traffic Safety Bureau yearly, and analyzes these data to help determine locations that are the most dangerous for people driving, walking, and biking. The latest available crash data is usually two years behind, but this process is becoming faster each year. MRMPO calculates general statistics and does more in-depth analysis to help identify areas in the region that should be priorities for imporving safety. The table here hows the upward trend of fatal crashes in the AMPA.

**Table 5-2: Crashes by Type in the AMPA**

| Year | Fatal | Injury | Property Damage |
|---|---|---|---|
| 2013 | 75 | 5176 | 13127 |
| 2014 | 90 | 5620 | 14386 |
| 2015 | 77 | 6761 | 15897 |
| 2016 | 125 | 7263 | 15509 |
| 2017 | 113 | 6836 | 16601 |
| Total | 480 | 31656 | 75520 |

### *Pedestrian Crash Data*

Nationally, in 2017, pedestrian fatalities comprised on average about 16 percent of all motor vehicle crash deaths[8]. New Mexico's share of pedestrian fatalities is at 19.5 percent and the pedestrian fatality rate per 100,000 residents is continually one of the highest in the nation[9]. In the region, a total of 147 fatal and 1,325 injury crashes involving pedestrians occurred between 2013 and 2017. This is a pretty significant increase from previous 5-year sets. **The percentage of fatal crashes involving pedestrians has increased by 72 percent since 2013.** A particularly alarming statistic for the AMPA is that even though crashes involving pedestrians account for only one percent of all crashes, when you look at fatal crashes, 30 percent involved a pedestrian**.** Of the pedestrian involved crashes with fatal outcomes 27 percent are in dark conditions and the majority (98 percent) are vehicles going straight and hitting a pedestrian crossing the road.

[8] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812681
[9] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812681

**Table 5-3: AMPA Pedestrian Crash Data by Severity (2013-2017)**

| Severity | Count |
|---|---|
| Fatal Crash | 147 (30% of fatal crashes) |
| Injury Crash | 1,325 (4% of injury crashes) |
| Property Damage | 129 (0.002% of property damage crashes) |

### *Bicycle Crash Data*

Nationally, bicycle fatalities comprise on average about 2.28 percent of all motor vehicle crash deaths, according to 2016 data.[10] Although the proportion of bicycle fatalities in New Mexico was below the national average at 1.0 percent, the bicycle fatality rate per 100,000 residents has exceeded the national bicycle fatality rate in the past three years. In the region, there were 966 motor vehicle crashes involving bicycles from 2013-2017. Crashes involving bicycles accounted for one percent of all crashes but accounted for four percent of fatal crashes. Those collisions resulted in 805 injury and 10 fatal crashes. **Of these 10 fatal crashes, seven occurred on a facility without bike infrastructure.** Furthermore, 54 percent of fatal and injury crashes involving a bicyclist were on facilities without bike infrastructure.

**Table 5-4: AMPA Bicycle Crash Data by Severity (2013-2017)**

| Severity | Count |
|---|---|
| Fatal Crash | 10 (2% of fatal crashes) |
| Injury Crash | 805 (2.5% of injury crashes) |
| Property Damage | 151 (0.002% of property damage crashes) |

### ***High Fatal and Injury Network***

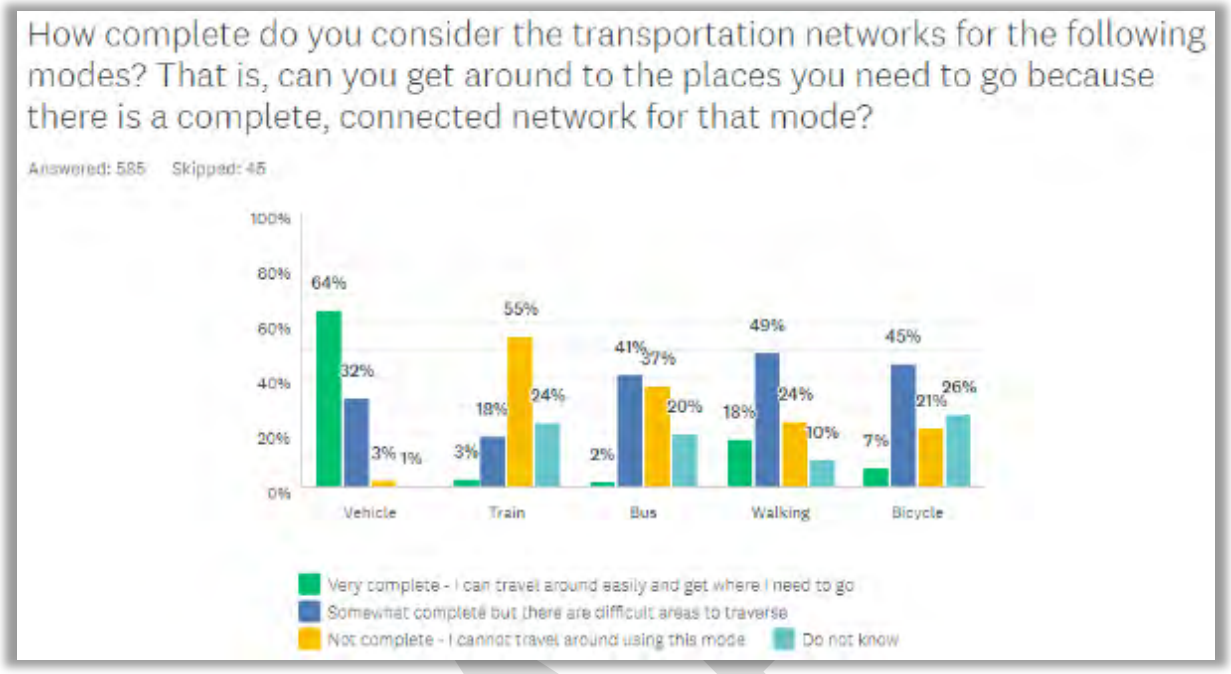
The High Fatal and Injury Network (HFIN), is a new planning tool that allows the region to target those locations that not only have the most crashes, but also the greatest impact on human lives. Using this tool, agencies can work with private institutions and organizations to implement preventative measures. A more detailed review of safety statistics is provided later in this chapter.

## d. Closing Network Gaps

According to the *Connections 2040 MTP* Questionnaire, a low number of respondents reported they felt the walking and bicycle networks to be 'very complete' at 18 and seven percent, respectively. The region includes many physical barriers for walking and bicycling routes, particularly with the river and interstate system, and the public has consistently requested addressing gaps that exist in the bikeway network through comments, questionnaire responses, and at outreach events.

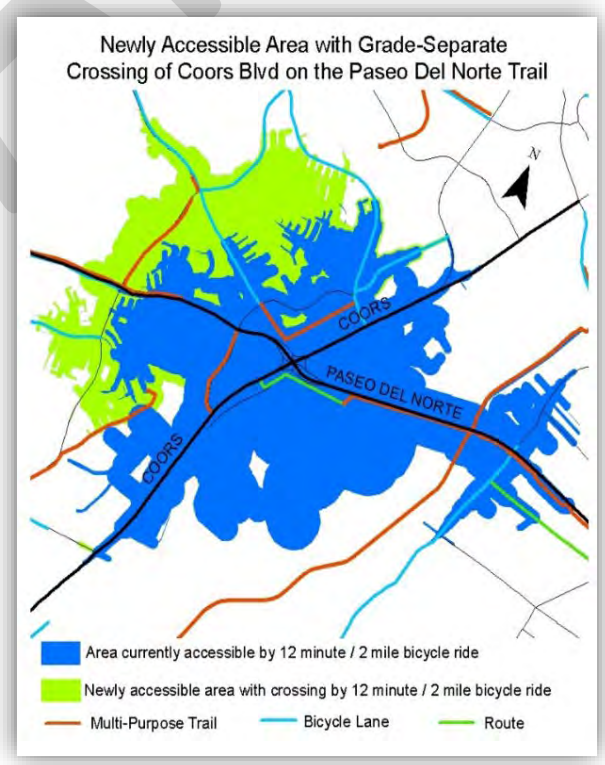
[10] https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812507

**Figure 5-4: MTP Questionnaire Responses about Connectedness of Transportation Networks**




In recent years some progress has been made in this regard with the construction of pedestrian and bicycle grade-separated crossings. The importance of closing gaps is reflected in the Project Prioritization Process. For instance, where a project makes a connection between two existing links of the bikeway and trail network, that project recieves more priority points than a project that only extends the network.

**Figure 5-5: Bicycle Accessible Areas with a Paseo del Norte Crossing over Coors Boulevard**




*Benefits of Closing Gaps*

Closing gaps in the bicycle and pedestrian networks provides better access to jobs, services, and other destinations such as schools and recreation. Importantly, it also provides more encouragement for people to bike and walk. Gaps identified through various outreach efforts in the MTP development include crossing I-25, especially at Paseo del Norte and Alameda, I-40 in downtown Albuquerque, the eastern end of Sunport Boulevard, and along NM 6 in Valencial County.

Through the use of the TRAM tool, MRMPO can measure by mode, including biking or walking, how well a new connection can greatly improve accessibility in the case of an existing gap in a network. For example, perhaps bicyclists or walkers find it difficult to cross a busy road.

TRAM analyses can show how a planned crossing would benefit the surrounding community by calculating how many people would be served and how many jobs would be accessible if the crossing existed. This method provides a general way to examine how a proposed crossing will improve accessibility in an area. As shown in the graphic above and table below, a grade-separated crossing over Coors Boulevard along Paseo del Norte is an MTP crossing project that would greatly improve bicycle accessibility to the surrounding area according to TRAM analysis.

**Table 5-5: Improved Bicycle Accessibility with Paseo del Norte Crossing over Coors Boulevard**

| | 2012 Population | 2012 Jobs | 2012 Households |
|---|---|---|---|
| **Current population, jobs, and housing accessible without crossing** | 7,033 | 2,229 | 2,703 |
| **Population, jobs, and housing accessible if crossing existed** | 11,980 | 3,082 | 4,552 |
| **Difference** | 4,947 | 853 | 1,850 |
| **% Change** | 70% | 38% | 68% |

## e. Future Bicycle Network

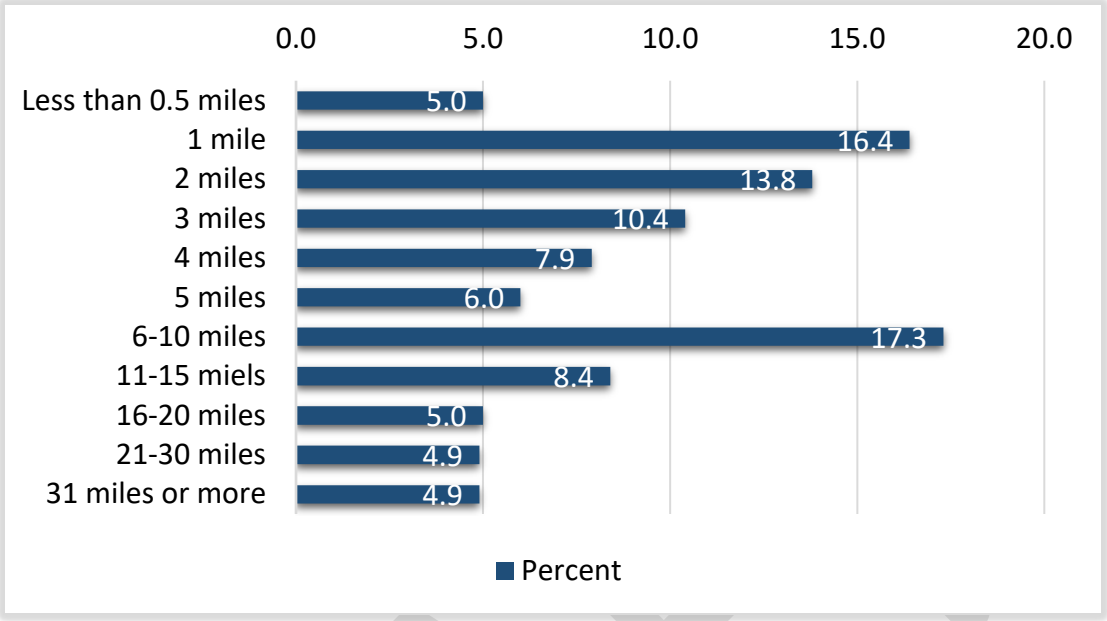
Over the last 10 years, there has a been a reframing in approaches to bicycle infrastructure. More consideration has been given to a wider variety of riders, often referred to as an "8 to 80" or "all ages and all abilities" approach. More consideration has also been given to female riders. By creating bicycle facilities with a higher level of comfort or less stress, more riders at a variety of ages and riding levels can potentially be appealed to and served. Creating connected, premium networks of bicycling facilities can make bicycling a safer, more convenient, and more attractive option. Examples of bicycle facilities that can increase comfort, safety, and potentially lead to more bicycle ridership include infrastructure separated from motor vehicles, protected bike lanes, and bicycle boulevards.

### *Premium Bicycle Network*

Most activity centers in the Target Scenario focus on providing higher residential and employment densities to allow destinations to be closer together, which supports the development of more walkable places. Being able to complete trips by walking within these centers is a key element in providing overall regional mobility and access. MRMPO also has a transit mode share goal in which 25 percent of funds programed through the Transportation Improvement Program (TIP) are set aside for transit. Most transit trips begin or end with a walk or bicycle ride, so more multimodal enhancements can also help transit access as well.

There is an opportunity to create a connected, premium bicycle network to attract riders within the "interested, but concerned" category. According to the 2017 National Travel Survey, more than 20 percent of all US vehicle trips are less than two miles and more than half of all vehicle trips are less than four miles, which can be bikable distances. Shifting more automobile trips to bicycle trips could have a great impact now and in the future - not only on vehicle emissions and air quality, but also for a person's health and the way they feel about and interact within their community.

**Figure 5-6: 2017 Share of US Vehice Trips by Distance, 2017**



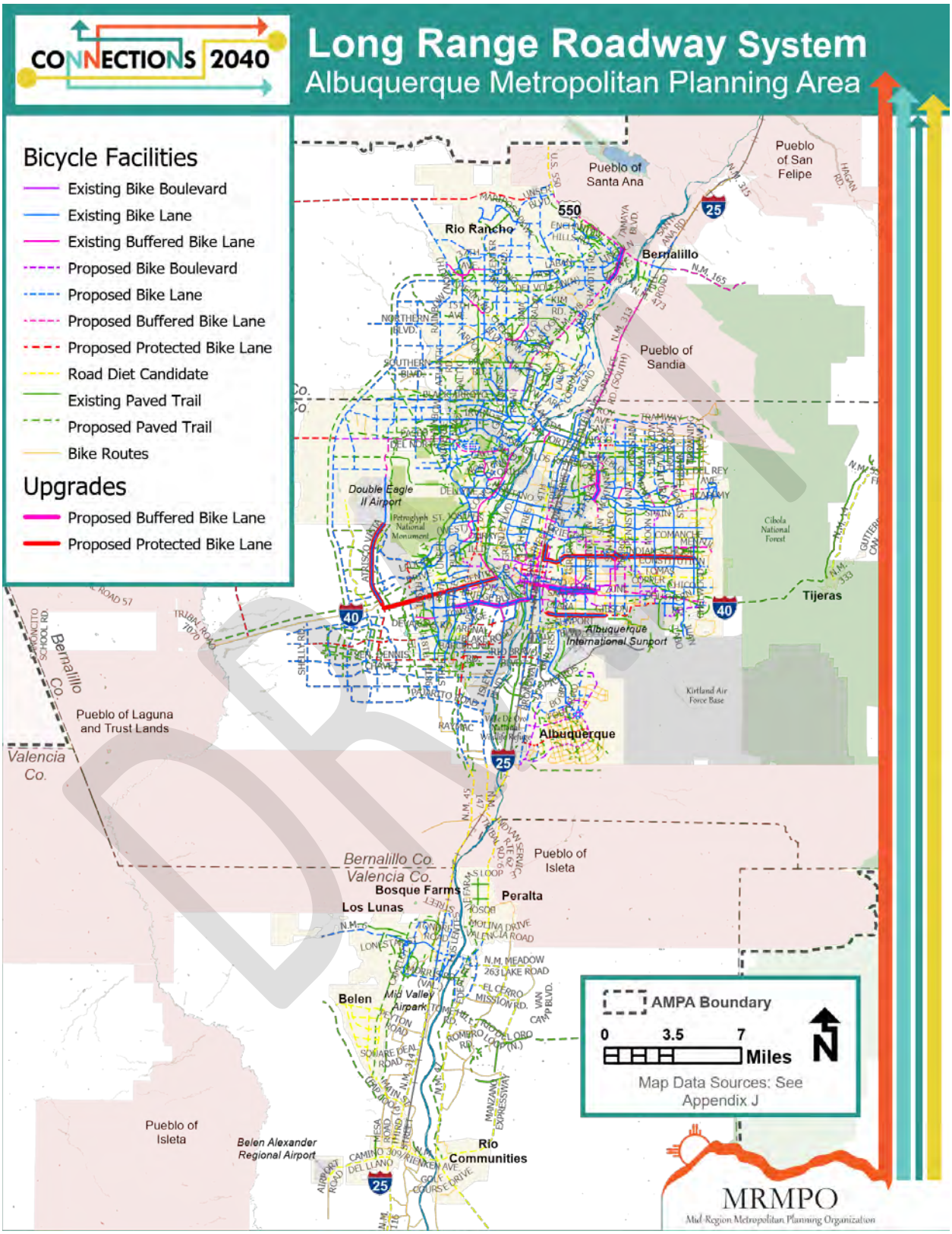

### *Long Range Bikeway System (LRBS)*

Fore the 2040 MTP, MRMPO's Active Transportation Committee updated the Long Range Bikeway System (LRBS). The LRBS provides high-level guidance about providing facilities that serve people of different ages and abilities, and is based on the National Association for City Transportation Officials (NACTO) guide for "Designing for All Ages and Abilities." As a result, there is now a greater focus in the latest LRBS is on creating a connected, premium network that serves people of all ages and abilities.

The LRBS does not provide prescriptive design guidance about specific treatments, but rather indicates what kinds of facilities might best serve a wider variety of people. For example, if the LRBS indicates that a protected bike lane is proposed for a given corridor, it does not prescribe what type of protected bike lane should be built. Local governments determine what type of facility to provide and are encouraged to implement a more premium option to get us closer to an all ages and all abilities network that will encourage more people to ride.

Ultimately, the LRBS provides an aspirational view of how people in the region would like the bikeway network to develop over time and is not limited to the 20-year horizon or funding limitations of the MTP project list. It is more of an "illustrative" map that aims to provide guidance on the development of future facilities.

**Map 5-3: Long Range Bikeway System (LRBS)**



## 5.2 Pedestrian Priorities

Priorities for improving the pedestrian network and pedestrian facilities in the AMPA must focus on developing walkable centers and safer conditions for pedestrians walking along and across streets (in an equitably minded way). Focusing on areas such as activity centers, schools, parks, transit stops, and areas with high crash rates will help target locations that could benefit most from improvements to the safety and comfort of pedestrian infrastructure. The Pedestrian Composite Index, described below, is a tool that can be used to inform pedestrian improvements. The region must work on bringing different methods, data, partners, and approaches together to ensure the pedestrian network—and pedestrian safety—improves over time.

### a. Targeting Needed Pedestrian Improvements

MRMPO updates and maintains the Pedestrian Composite Index, a tool to help prioritize roadways for pedestrian improvement and address the need to reduce pedestrian crashes. The Pedestrian Composite Index uses regional data to compare features that deter pedestrian travel (crashes, speeds, volume, number of lanes) and features that generate pedestrian activity (transit, schools, retail densities, residential densities). This Index has evolved over the years, and the most recent update includes a change that focuses on roadways with high generator scores instead of both deterrents and generators. This was done because MRMPO developed other regional tools that such as the High Fatal and Injury Network (HFIN) and Road Diet analysis, which already highlight areas with deterrent features.

This tool helps compare roadways in the region and provides a wide variety of pedestrian related data for segments of roadways to help show where pedestrian improvements could be most beneficial. However, it does not provide details, such as the presence and width of sidewalks, which are necessary to calculate pedestrian level of service. Nor does it provide information on future demand for walking. As local jurisdictions gather this data, MRMPO will be able to expand this assessment to include sidewalk condition and width.

**Table 5-6: Inputs to Pedestrian Composite Index**

| Pedestrian Generator Data |
|---|
| • Proximity to schools<br>• Proximity to high-volume bus stops<br>• Proximity to parks and community centers<br>• Proximity to higher density areas of jobs and housing<br>• Proximity to higher roadway connectivity – number of four-leg intersections per square mile<br>• Percent of population 16 years+ who walk or take transit to work (latest ACS data)<br>• Percent of households with 0 vehicles or fewer vehicles than workers (latest ACS data) |

**Map 5-4: Pedestrian Composite Index**

**[In process of being updated]**

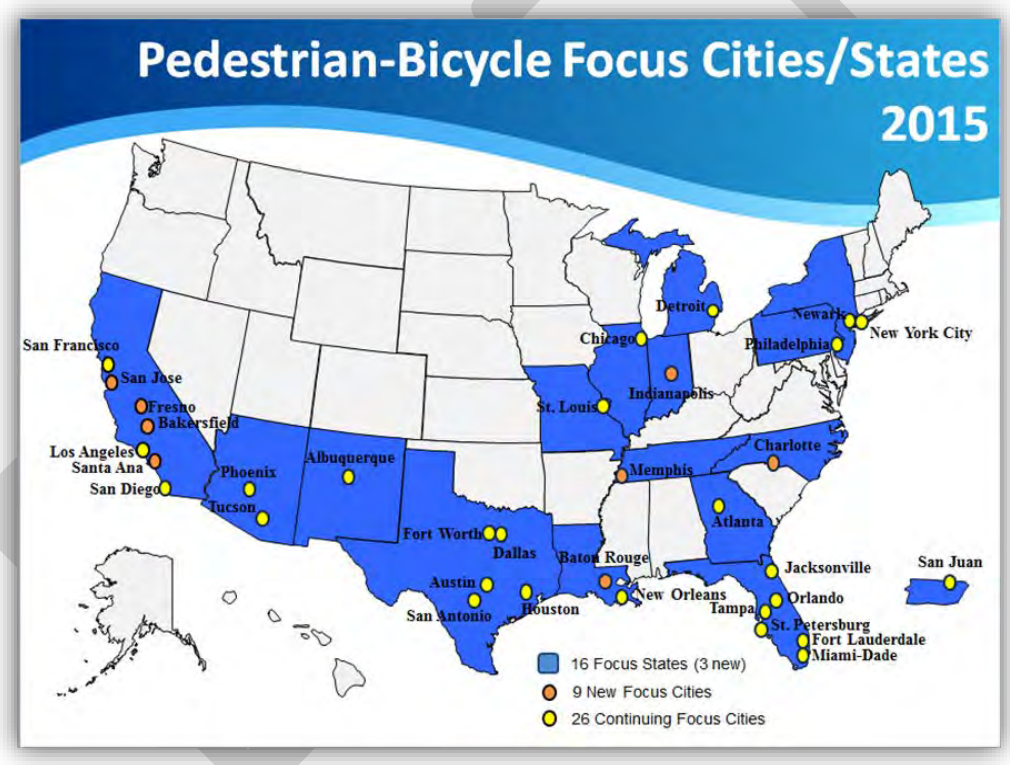
# 5.3 Roadway Safety Priorities

### *FHWA Focus City and State*

According to the Centers for Disease Control and Prevention (CDC), traffic crashes are the **leading cause of unintentional death in the United States for the age group 4 through 34.** Both the Albuquerque metropolitan area and the state of New Mexico stand out when it comes to certain types of fatalities and high crash rates, which are considered a public health crisis. Because of this, the Federal Highway Administration (FHWA) identified New Mexico and Albuquerque as a *Focus State and City,* respectively, and provides technical assistance to address high pedestrian and bicycle fatalities. FHWA aided in the form of Road Safety Audits along West Central and for the intersection of San Mateo and Central. These Road Safety Audits helped bring more attention to traffic safety and identify potential interventions to improve safety in these areas.

**Figure 5-7: FHWA Focus Cities and States**

Source: https://safety.fhwa.dot.gov/ped_bike/ped_focus/focus_cities_states2015.cfm.




### *Cost of Crashes*

In 2014, the CDC estimated the annual cost of medical care and productivity losses at over $99 billion dollars for motor vehicle-related injuries and $41 billion for crash-related deaths. The safety of a transportation system also significantly impacts how accessible services are and improving safety can help reduce congestion.

According to a study done by AAA in 2008, **40 to 50 percent of all non-recurring congestion may be associated with traffic incidents.** Transportation safety is therefore a critical issue that impacts congestion, economic vitality and productivity, and public health and continues to be highlighted as a key planning emphasis in federal transportation legislation. For more information on improving Incident Management and the impact that this type of non-recurring congestion has on the operations of our regional transportation system see Chapter 4.

### *Federal Legislation and National Goals*

Federal legislation requires that the planning process include consideration of the safety of the transportation system for motorized and non-motorized users. The latest federal transportation legislation, **Fixing America's Surface Transportation Act or FAST Act, identifies safety as a national goal area and requires states to set targets to improve safety**. If targets are not met then funding allocation can change. This legislation also increases the amount of funds for the Highway Safety Improvement Program (HSIP) and requires expanded data collection and analysis as well as more stakeholders to be involved in the fund allocation process.

## a. Regional Crash Statistics

From 2013 to 2017, 527 people were killed in traffic crashes in the Albuquerque Metropolitan Planning Area (AMPA) and 46,831 people were injured. Of those injuries, 2,850 were serious or incapacitating injuries. **A particularly alarming statistic for our region is that 30 percent of the total number of fatal crashes in our region involve pedestrians.**

Pedestrians are our most vulnerable roadway users and by making our roadways safer for them, we can reduce crash-related fatalities and injuries for every mode of travel and increase mobility options for all roadway users. Other safety challenges in the AMPA include, but are not limited to, addressing major intersections and corridors that have high crash rates, alcohol-involved crashes, crashes where young drivers are involved, and the high occurrence of fatal and injury motorcycle crashes. In order to address these issues, driver behavior, roadway design, enforcement, and education among other areas need to be investigated.

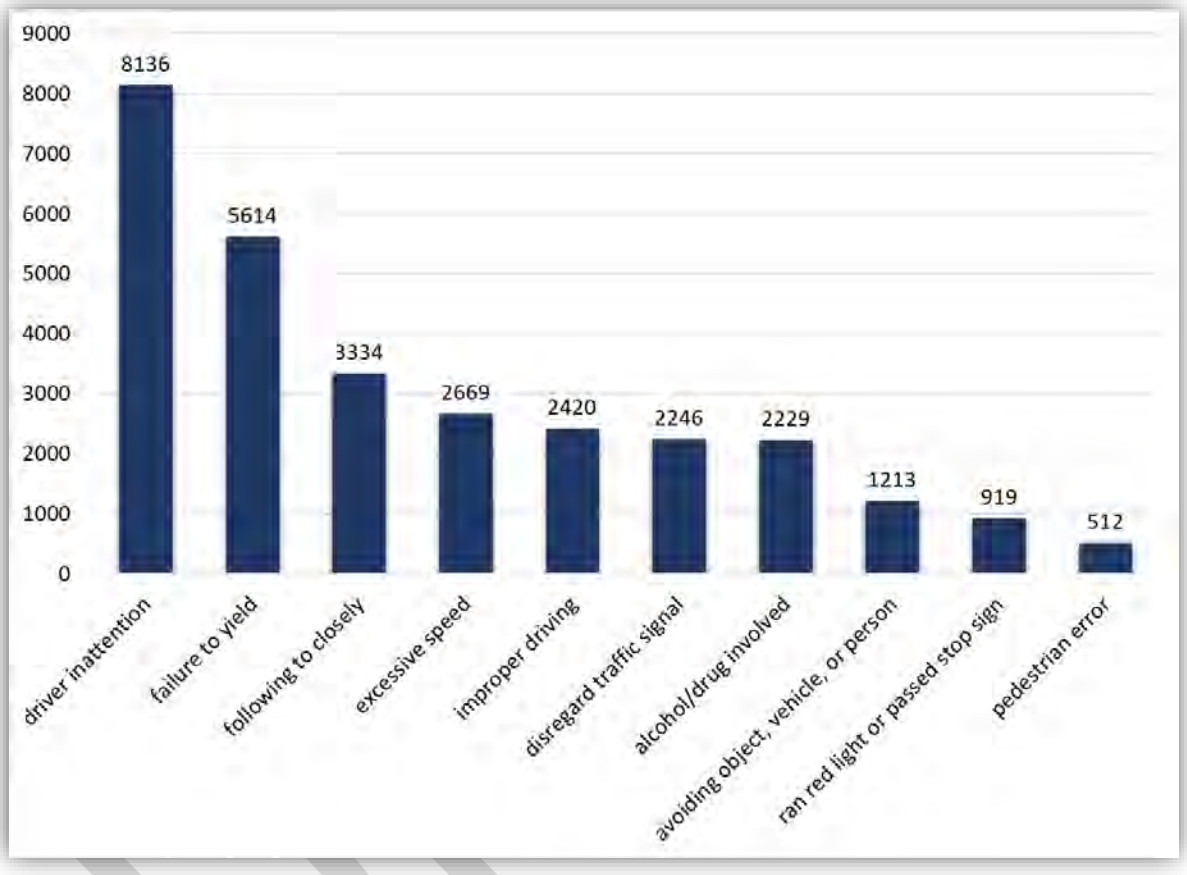
This plan uses the most recent crash data available: 2013 through 2017. The crash data is provided by University of New Mexico Geospatial Population Studies department, which geocodes crash record data compiled by the New Mexico Department of Transportation's (NMDOT) Traffic Safety Bureau from police records across the State of New Mexico. In order to be included in this database, a crash must involve at least one motor vehicle, occur on a public roadway, and result in at least $500 of property damage or personal injury. This crash data, along with MRMPO's street network and traffic counts data, allow for the region's crash rates to be calculated.

When addressing transportation safety issues in the AMPA, there are federal, state, and regional plans and guidance to consider. The Federal Highway Administration (FHWA) has identified "4 Es" for making roads safer: engineering, education, enforcement, and emergency medical services. The FHWA stresses the importance of developing data-driven systemic approaches and technologies to analyze safety issues and considering safety needs early and throughout the project development process.

## b. Top Contributing Factors (TCF)

It is important to identify top contributing factors (TCF) in the region which result in the most injuries and deaths. For fatal *and* injury crashes combined inattentive driving is the top contributing factor followed by failure to yield, following too closely, and then excessive speed.

**Figure 5-8: TCFs for Fatal and Injury Crashes (2013-2017)**

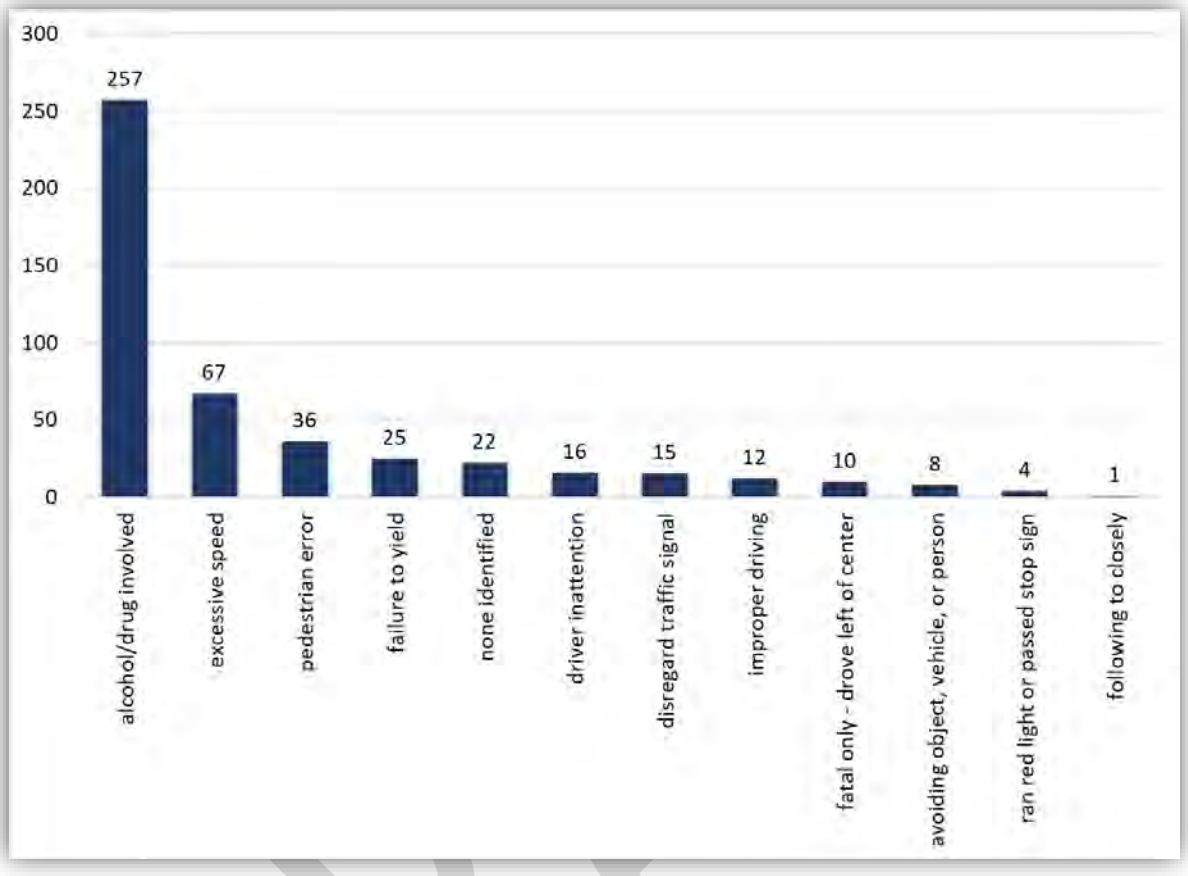



Of the fatal crashes, alcohol/drug involved is the top contributing factor followed by excessive speed. Alcohol/Drug Involved crashes are a serious issue for all modes of travel. Drove left of center stands out as a unique factor with fatal crashes. Six of these are along Interstate type highways and only two are not rural areas.

### *Excessive Speed and Dangerous Driving*

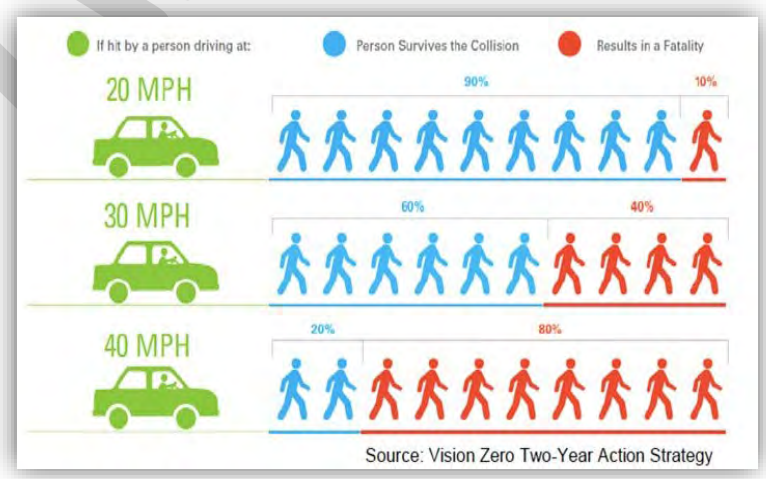
Excessive speed is the TCF in 14 percent of fatal crashes in the region. Other dangerous driving factors include following too close, disregarding traffic signals, and running red lights. Combined, excessive speed and dangerous driving make up 25 percent of fatalities.

**Figure 5-9: TCFs for Fatal Crashes Only (2013-2017)**




Speed is a factor in nearly one-third of all traffic deaths in the United States (NHTSA). Speed increases the likelihood of being involved in a crash and increases the severity of injuries for those involved in a crash—especially vulnerable roadway users such as pedestrians or bicyclists[11]. This region needs to focus on curbing dangerous driving and specifically speeding drivers, which can in turn, significantly reduce the number of crashes overall and increase the survivability if a pedestrian involved crash does occur.

**Figure 5-10: Impact of Speed on Pedestrian Fatalities**




[11] (National Transportation Safety Board, 2017).

### *Pedestrian Error*

Pedestrian Error is reported as the third highest TCF for fatal crashes. According to analysis in the RTSAP, Pedestrian Error is disproportionately represented in fatal crashes, which indicates issues with the way crash data is reported. In addition, the identification of a pedestrian error in the first place can be difficult and may not always be applied correctly.

Unfortunately, there seems to be misunderstanding of what an unmarked crosswalk is (locations where pedestrians have the right of way) and usually a police officer can only take the driver or pedestrian's word on whether they left the curb with adequate time for a driver to stop. When a pedestrian is killed or seriously injured, they cannot tell their side of the story. It is not always possible to know if the driver was speeding and therefore the pedestrian gauged their time to cross incorrectly. In other states the laws are different. In some places the driver must stop regardless of where the pedestrian is crossing.

**The Law for Pedestrians and Drivers in New Mexico**
In New Mexico, vehicles must yield the right-of-way to pedestrians crossing a roadway within a marked crosswalk or unmarked crosswalk (NCSL, 2016). However, pedestrians may not suddenly leave the curb and enter a crosswalk (marked or unmarked) into the path of a moving vehicle that is so close that the vehicle is unable to yield. An unmarked crosswalk is a portion of a roadway "ordinarily included with the prolongation or connection of the lateral lines of sidewalks at intersections." Outside of marked or unmarked crosswalks, pedestrians must yield the right-of-way to vehicles.

### *Bicycle and Pedestrian Crash Reporting*

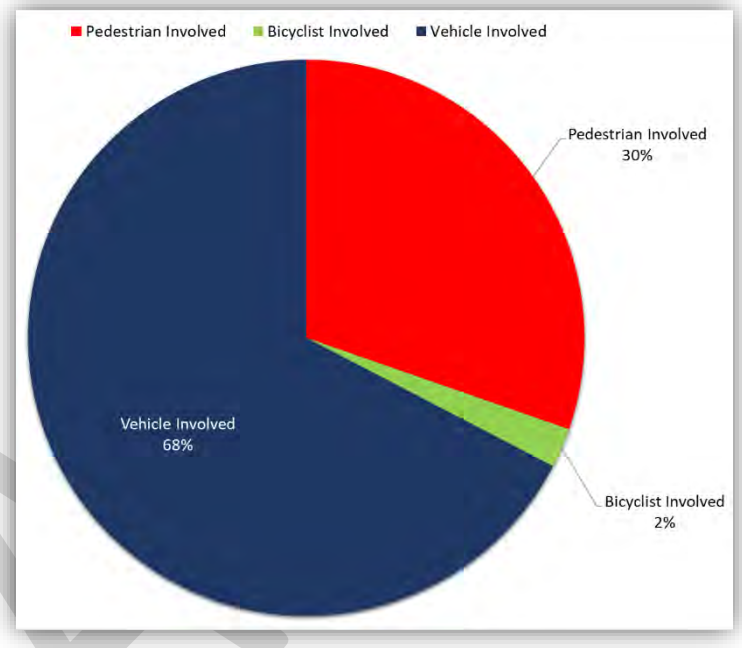
A recent Transportation Research Board (TRB) paper investigated local media coverage of vehicle crashes involving pedestrians and bicyclists and how these crashes were covered. The research results found that local news coverage tended to shift the blame toward pedestrians and/or bicyclists and away from drivers[12]. The research also found that "news coverage misconstrues the problem [of traffic crashes]. Rather than addressing commonalities between crashes, coverage almost always treats crashes as isolated incidents, obscuring systematic solutions."[13] These patterns can make it difficult to make true changes to our built environments and also to initiate a paradigm shift in which people walking or biking are not villainized for doing so.

[12] http://www.eden.rutgers.edu/~ei60/crashespaper.pdf
[13] http://www.eden.rutgers.edu/~ei60/crashespaper.pdf

## 5.4 Regional Transportation Safety Action Plan (RTSAP)

The previous MTP, *Futures 2040*, called for the creation of a regional safety plan. The RTSAP was developed in response. The RTSAP was created in 2018 through data driven analysis in collaboration with local agency stakeholders and public input. It puts forth well-researched best practices for combating unsafe streets by identifying short and long-term implementable action items. The plan also identifies Vision Zero as a key approach to improving safety in the AMPA. The RTSAP was unanimously adopted by the Metropolitan Transportation Board (MTB) in August 2018 and was incorporated into the project prioritization process to encourage member agencies to target challenging areas with safety interventions. Additionally, the plan identified specific emphasis areas and goals to evaluate and track progress.

**Figure 5-11: Fatal Crashes in the Region by Mode**




### a. RSTAP Goals, Emphasis Areas, Action Items, and Findings

***RTSAP Goals***

1. A year over year reduction in fatal and injury crashes:
    a. at high priority corridors and intersections
    b. related to excessive speed and dangerous driving
    c. involving pedestrian and bicyclists
    d. involving alcohol and drugs
2. An overall 5 to 10 percent reduction of the above categories of fatal and injury crashes over the next 5 years.
3. A year over year increase in the levels of comfort and safety experienced by bicyclists and pedestrians out in traffic.
4. Complete streets approach incorporated by all future construction projects from inception to construction.

***RTSAP Emphasis Areas***

1. Reduce excessive speed and dangerous driving
2. Design streets for all modes of travel
3. Implement meaningful behavior change campaigns
4. Expand data collection and traffic management
5. Ensure strong policy and funding mechanisms
6. Provide targeted traffic enforcement

### *RTSAP Action Items*

The RTSAP also includes a comprehensive list of potential action items grouped under each Emphasis Area. These action items are adapted to our region and provide an excellent starting point for the public and local agencies to consider for implementation. An example action item is a road diet.

### *Road Diets*

A road diet is essentially a reallocation of roadway space that aims to reduce dangerous speeding and improve infrastructure for vulnerable road users, such as pedestrians, people with disabilities, and bicyclists. The most common type of road diet reconfigures an undivided four-lane roadway and into a three-lane roadway, with one travel lane in each direction and a two-way left turn lane in the center. This reconfiguration decreases conflict points and creates space for bicycle lanes and/or parking spaces in each direction of travel. The bike and/or parking lane also provides pedestrians with a traffic buffer, increasing their comfort on the sidewalk.

According to the USDOT, road diets can reduce traffic crashes to a very large degree.

- In small urban areas with populations around 17,000 and roadways with up to 12,000 trips (daily volume), crashes dropped about 47 percent after a road diet was implemented.
- In larger metropolitan areas with populations around 269,000 and roadways with up to 24,000 trips (daily volume), the crash reduction was roughly 19 percent.

**The combined estimate from all the best studies predicts that crashes will decline an average of 29 percent after a four-to-three-lane road diet.** Because road diets are a low-cost and proven safety countermeasure, MRMPO identified potential road diet candidates in the AMPA. The analysis is found in the RTSAP and an interactive map of road diet candidates can be found on the MRMPO website[14]. The City of Albuquerque implemented several successful road diets, including Central, Zuni, San Pedro, and Rio Grande.

### *Other RSTAP Findings*

#### *Rural Areas*

According to the RTSAP (2011-2015 crash data), rural areas experience a larger proportion of fatal crashes than other areas. Only 1.7 percent of all crashes occurred in the rural areas, yet 12.5 percent of all fatal crashes occurred in those areas. The top contributing factor for these fatalities is excessive speed, contributing to 20 percent of deadly incidents. Other primary issues in rural areas are driving left of the center of roadways and rollovers. Although "rollover" is listed as the top contributing factor in many crashes, speed is an element of that factor. Thirty-six percent of rollover crashes are due to excessive speed (which outweighs alcohol/drug-related; responsible for 21 percent of rollovers). Enforcement, educational campaigns, and design interventions like narrowing lane widths are all useful in addressing excessive speeding.

#### *Traveling by Motorcycle*

The RTSAP data revealed high rates of motorcycle crashes, with three percent of crashes involving a motorcycle and 24 percent of fatal and serious injury crashes involving a motorcycle, despite the fact that relatively few trips are made by motorcycle (for instance, only 0.4 percent of commuters use motorcycles to travel to work). New Mexico does not have a universal motorcycle helmet law, which would require that all motorcycle riders and their passengers wear a helmet when riding.

[14] https://www.mrcog-nm.gov/255/Safety-Analysis).

*Unsafe Intersections*

Another aspect of our built environment which poses travel challenges is unsafe intersections. Some of the intersections that stand out consistenly as being high in fatal and injury crashes over the years are Central Ave and San Mateo Boulevard, Montgomery Ave and San Mateo Boulevard, and Coors Boulevard and Paseo del Norte. Often the intersections with high crashes are surrounded by mixed land uses and have many lanes of traffic, as well as major transit lines. Each seven- to eight-lane leg of Central and San Mateo, for example, carries between 22,000 to 33,000 vehicles on an average weekday. As the region looks to increase transit and mixed-use development to address congestion, mobility, and a variety of other regional issues, it will be important to avoid conflicts that occur when land uses and services that promote walking and bicycling are located along high-speed, high-volume arterials. Intersection design that prioritizes safety must also become the norm. The RTSAP and LRTS Guide provide some design ideas in this respect.

## b. Vision Zero

Vision Zero is used around the world to eliminate all traffic fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all. It is a commitment to create safer streets for all of us, whether we are walking, biking, driving, or taking transit, and regardless of our age or ability. Vision Zero policy is an integral part of the RTSAP and many of the strategies listed in the RTSAP are related to a changing paradigm in how we address dangerous crashes. For decades, there has been an implicit assumption an inevitable amount of death and injury is acceptable on our public roadways[15]. However, these traffic collisions are not ***accidents***; they are preventable ***crashes***.

**Figure 5-12: Traditional Safety Approach versus Vision Zero**


Source: https://visionzeronetwork.org/wp-content/uploads/2017/10/Why-VZ-is-Different-1024x444.jpg

Sweden first implemented the Vision Zero concept in 1994 and reduced its traffic fatalities by half since 2000[16]. Such a radical vision for safety was not adopted without meeting resistance from political economists and experts in the transportation sector.

[15] Morris, 2016.
[16] *Economist*, 2014.

Most did not believe zero fatalities were achievable and that fatalities were just a consequence of transporting people. However, the success of Vision Zero programs show that fatal and injury crashes can be reduced significantly. Since its conception, countries around the world (Sweden, the Netherlands, the United Kingdom, Norway, and more), state DOTs (Rhode Island, Virginia, Michigan, Minnesota, and Pennsylvania), and cities (Boston, New York City, San Francisco, Seattle) have adopted the goal of zero fatalities.

### *Vision Zero City of Albuquerque*

In May 2019, Mayor Keller signed an Executive Order committing the City of Albuquerque to work toward the goal of zero traffic deaths by 2040. The City will start by developing a Vision Zero Action Plan guided by Equity, Education and Encouragment, Engineering, and Enforcement. The City of Albuquerque will work toward zero traffic fatalities, paying particular attention to vulnerable roadway users such as pedestrians, bicyclists, and people with disabilities.

**Figure 5-13: City of Albuquerque's Vision Zero Goals**


## c. High Fatal and Injury Network (HFIN)

The High Fatal and Injury Network (HFIN) is a critical strategy to identifying recurring crash areas and is considered a critical element of any Vision Zero plan. The HFIN, developed as part of the RTSAP, shows above average fatal and injury crashes per mile and above average fatal and injury crash rates at intersections for every major road in the AMPA. Interstates were not included because they are maintained and operated by the NMDOT and are accounted for in the State Highway Safety Plan. Pedestrian and bicycle crashes per mile, and number of crashes per intersection, were also identified as a part of the HFIN.

### *Geographic Areas and Methodology*

The HFIN was developed by reviewing each geographic area (Large Urban, Small Urban, and Rural, which includes Tribal areas) individually, and then calculating the mean of either the intersection rate by volume or the crashes per mile. Intersections and roadways included in the HFIN experience ***1.5 times*** the mean crash rate. Pedestrian crashes at intersections were analyzed using a total number of crashes as opposed to a rate.

### *Intersection Crash Rates*

Crash rates provide a more accurate picture than total crash numbers of the most dangerous intersections in the AMPA area. High crash rates may occur for a variety of reasons, including driver inattentiveness and speed. However, other factors also include lack of adequate facilities for the more vulnerable non-motorized modes, roadway design that encourages speed, and line of sight distance issues.

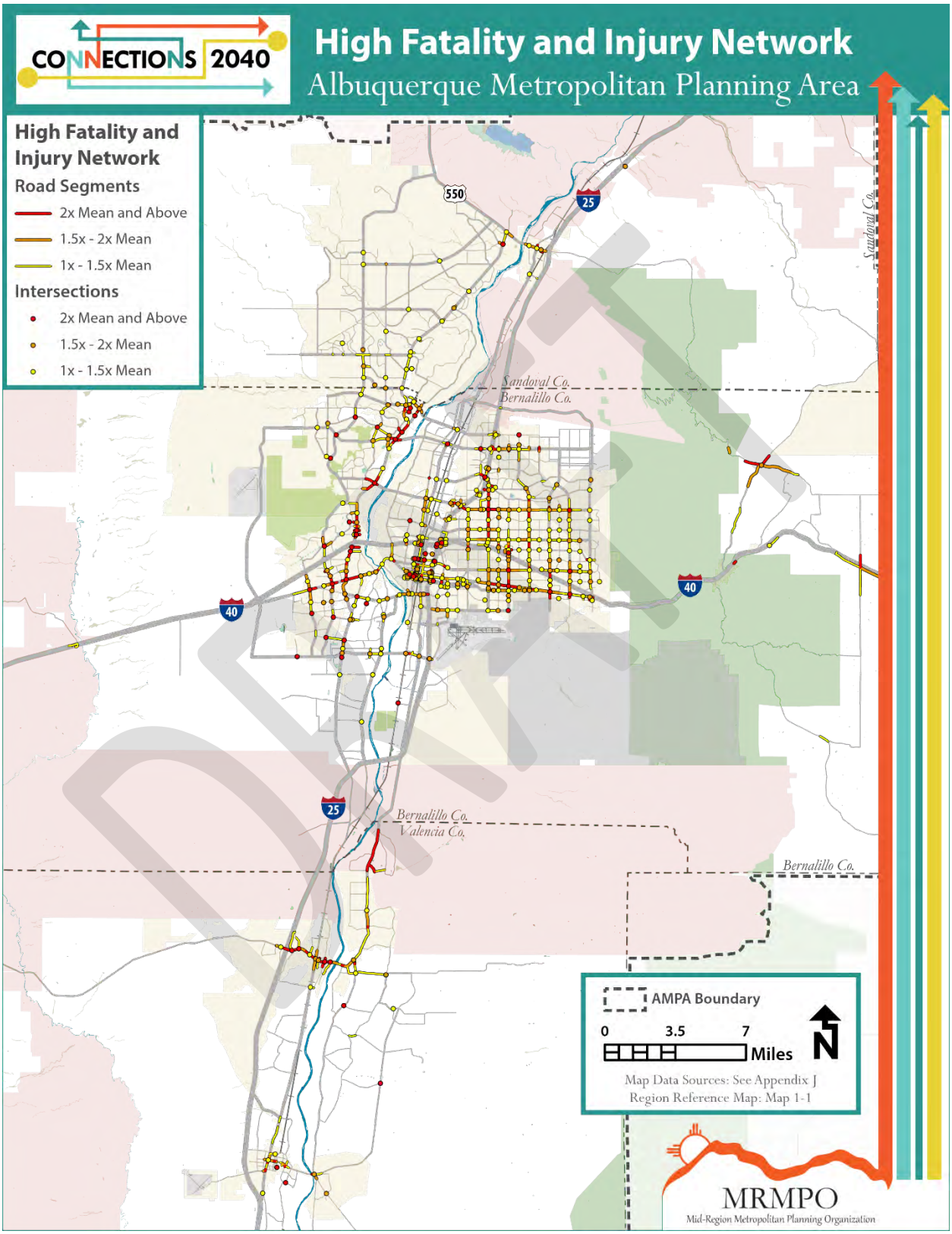
Crash rates were calculated on thoroughfare intersections in the AMPA for the period of 2013 to 2017 by dividing the number of crashes at an intersection by the number of vehicles entering the intersection. These rates are expressed as crashes per million vehicles. Crash rates were also calculated for fatal and injury related crashes, and bicycle and pedestrian involved crashes. For severe (fatal and injury) intersections crash rates certain corridors stand out.

### *HFIN and Targeted Funding*

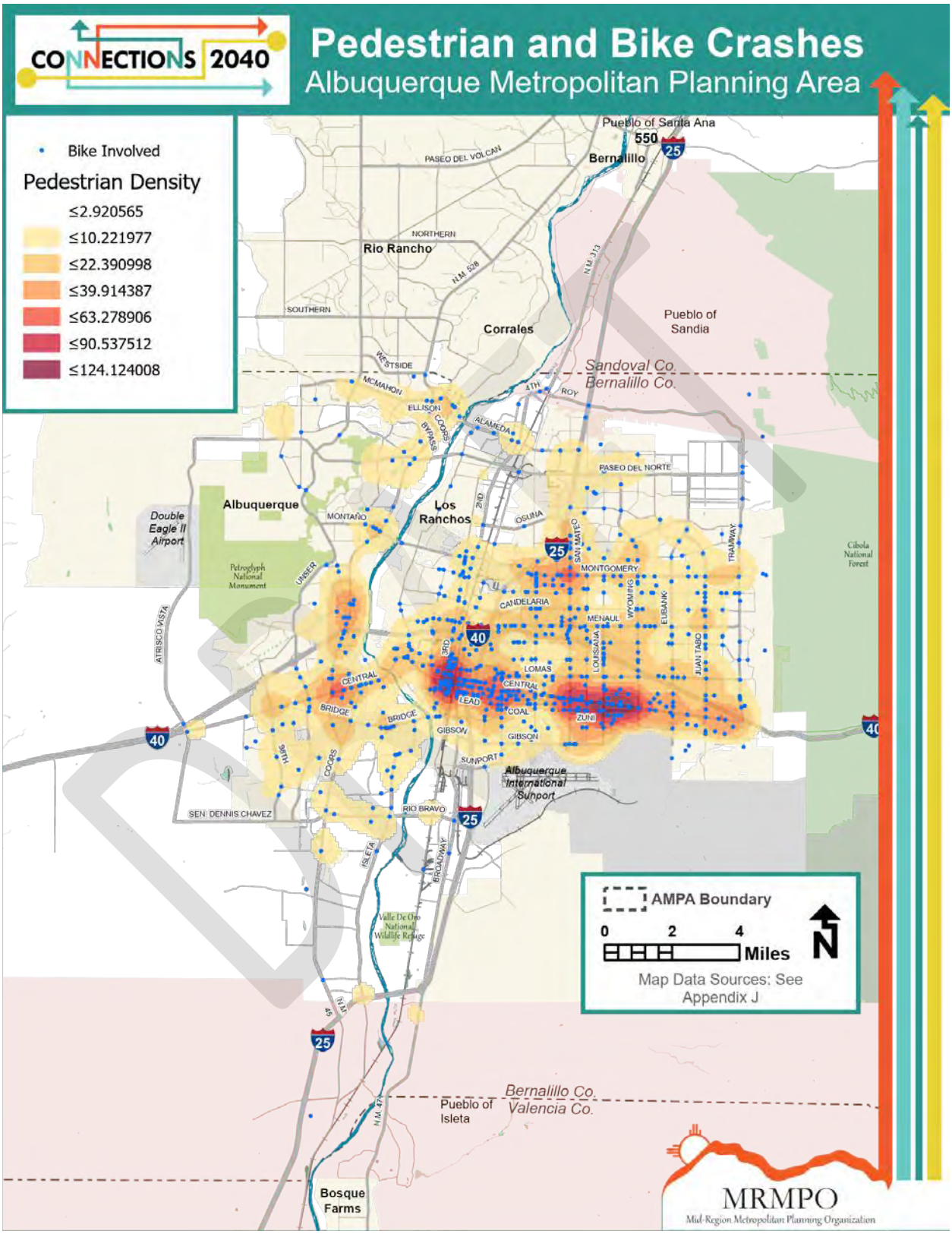
There is clearly a high need for safety improvements in our transportation system, yet funding to accomplish improvements is limited. This makes it imperative to be selective about where safety funds are spent. Identifying the most dangerous streets and intersections allows the region to focus efforts where they are needed most to get the biggest bang for our "safety buck." Below, two networks are presented that can help guide future decision-making regarding where to implement safety strategies and where to invest limited funding.

**Over half (64 percent) of total fatalities and injuries occur on just two percent of all roads in the AMPA.**

**Map 5-5: High Fatal and Injury Network**



**Map 5-6: Bicycle and Pedestrian Crash Density**



# 5.5 Public Health Connections

In the early 20th century, the emerging field of urban planning sought to address public health through land use zoning to separate harmful uses from residential uses. Later in the century, urban planning and public health diverged into separate fields as planning became more concerned with design. Today, the fields of planning and public health are increasingly converging to address significant public health challenges related to the built environment, as the connection between the modern built environment and public health outcomes are becoming better understood and documented through research and studies. MRMPO recognizes the importance of the convergence of the public health and planning fields at the national and local levels, and that the formation of partnerships will be key in addressing significant health challenges. It is now understood that transportation issues are not merely connected to pressing health concerns, but that transportation planning will be a key strategy in addressing these concerns in their totality.

## a. Current Health Conditions

### *Local Public Health Challenges*

Many have named obesity a national epidemic. In 2002, a study estimated that obesity was responsible for over nine percent of total health care spending in the United States[17]. By and large New Mexico has followed the national trend of a dramatic rise in obesity rates. The state's 2010 adult obesity rate was 25.6 percent, more than double the rate in 1990.[18] While a recent report found that obesity rates are beginning to stabilize in New Mexico, there is still much more that needs to be done to bring the rates down to acceptable levels.[19] Not only is obesity a concern but related diseases such as heart disease and high blood pressure are important to address. **In the United States and in New Mexico, heart disease is the leading cause of death.** It has been estimated that obesity and its related health problems rival tobacco use in negative health impacts.[20]

### *Physical Activity*

Currently in New Mexico, only 52.2 percent of adults and 26.3 percent of youth are meeting aerobic exercise guidelines (150 minutes a week), and more than a quarter of adults are getting "little to no leisure time physical activity."[21] Encouraging active modes of transportation is a crucial ingredient for a healthy community. There is substantial evidence that sedentary lifestyles negatively impact mental and physical health and it is a widely accepted fact that physical activity positively affects health. Since many trips happen within walking or cycling distance from the trip's origin, providing safe and inviting conditions to encourage the use of active modes for these trips is an important strategy for improving a community's health.

[17] Finkelstein, E. A., Fiebelkorn, I. C., Wang G. "National medical spending attributable to overweight and obesity: how much, and who's paying?" *Health Affairs Web Exclusive*. 2003

[18] New Mexico Department of Health, Chronic Disease Prevention and Control Bureau, "Complete indicator profile of obesity: adult prevalence," 2013

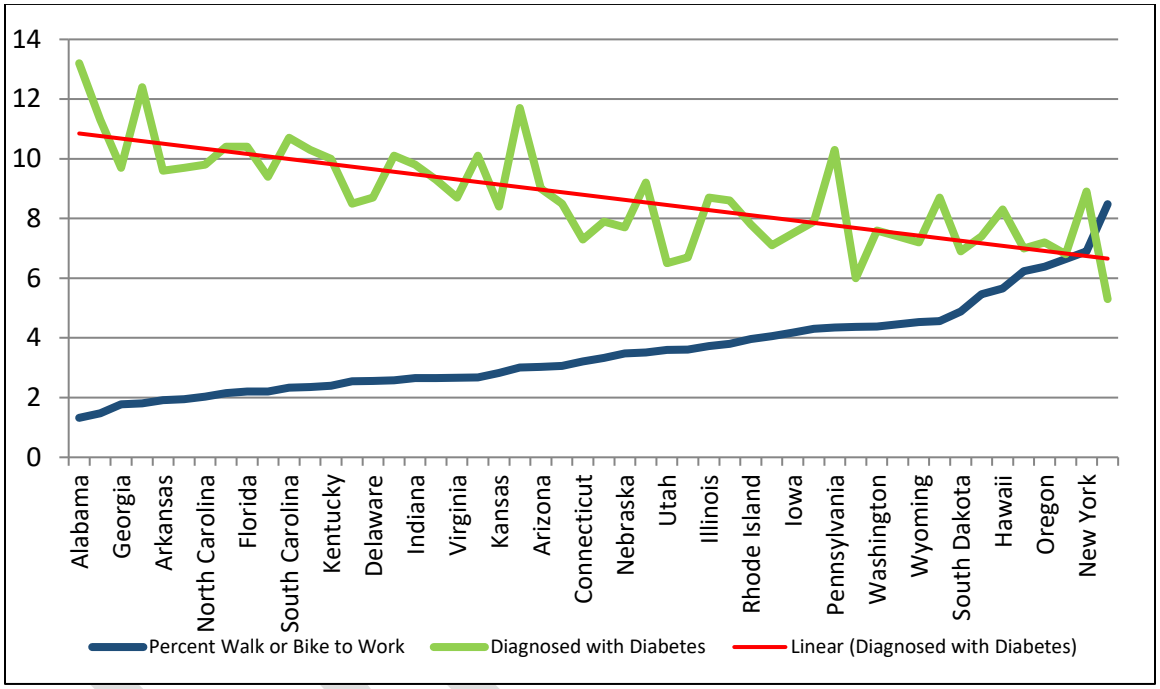
[19] New Mexico Department of Health, Public Relations, "Exercise shouldn't be a chore." *Healthy Living,* 2014

[20] Simcoe Muskoka District Health Unit, "The Impact of the Built Environment on the Health of the Population: A Review of the Review Literature," 2007

[21] New Mexico Department of Health, Public Relations. "Half of New Mexico adults meeting aerobic exercise guidelines," *Healthy Living.* 2014

A moderate amount of physical activity is associated with a reduction in mortality, depression, and reduced frequency of dementia. These issues are relevant to transportation and land use planners because a person can meet their daily physical activity needs by using active modes of transportation such as bicycling, walking, and even taking transit.[22] [23] One study found that **"each additional hour spent in a car per day was associated with a 6 percent increase in the likelihood of obesity,"** and that the inverse is true for public transit users due to the fact that transit users walk to and from transit stops.[24] The inverse relationship between the percentage of workers who commute by biking or walking and the percentage of people diagnosed with diabetes is shown below. There are other benefits too; in particular, switching from driving to more active modes can measurably reduce emissions and improve air quality.[25]

**Figure 5-14: Percentage of People Diagnosed with Diabetes and Workers who Bicycle or Walk to Work[1]**

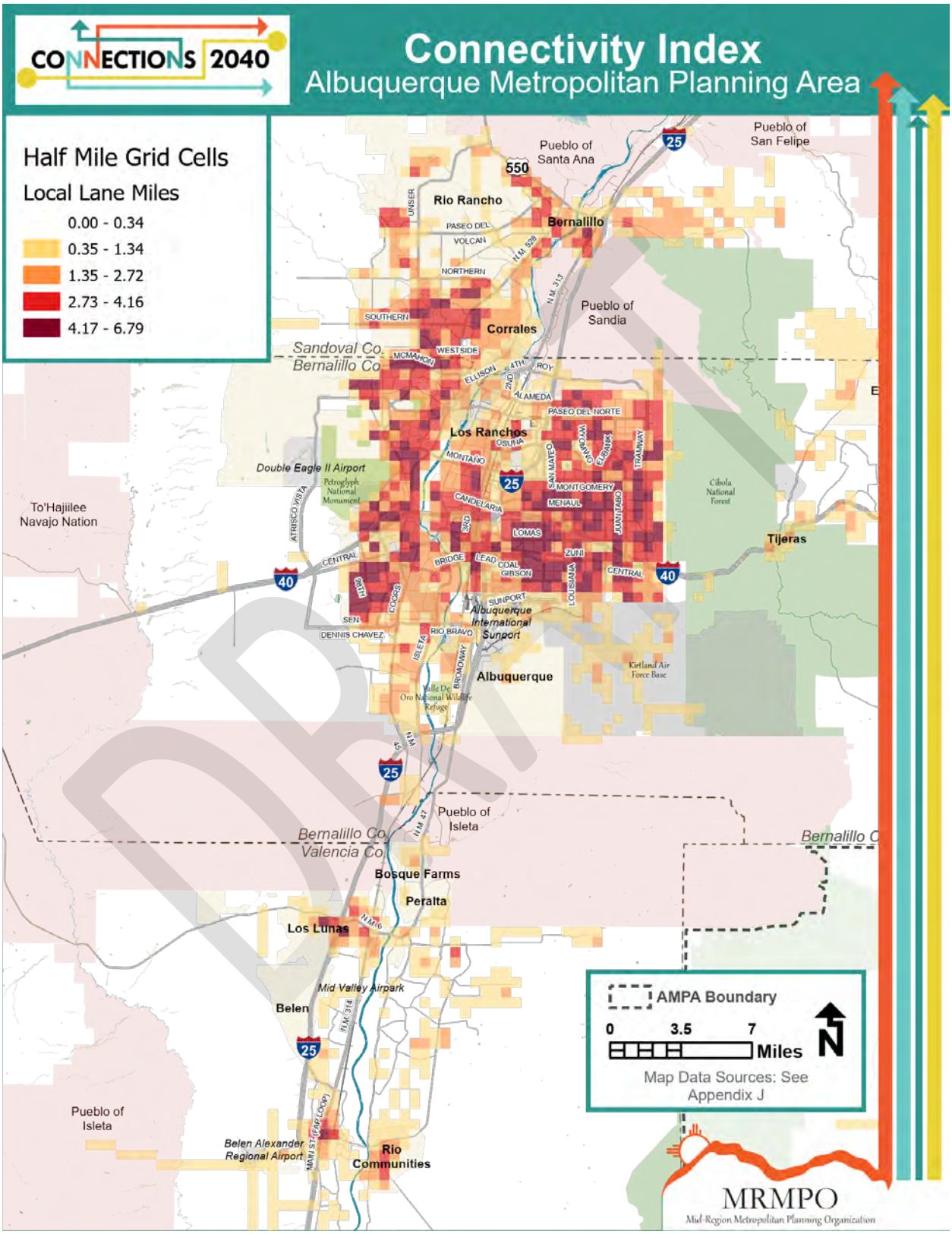



### *Connected Street Networks*

An active transportation system is more than sidewalks, bike lanes, and transit services; it is also influenced by the layout and design of the broader roadway networks, which alone can have significant impacts on health outcomes. One study found that "more compact and connected street networks with fewer lanes on the major roads are correlated with reduced rates of obesity, diabetes, high blood pressure, and heart disease among residents," even when controlling for food environment, land uses, commuting time, socio-economic status, and street design.[26]

[22] Killingsworth, R., De Nazelle, A., & Bell, "Building a new paradigm, improving public health through transportation," *Ite Journal-Institute of Transportation Engineers*
[23] Dill, J., "Bicycling for Transportation and Health: The Role of Infrastructure." *Journal of Public Health Policy*, 2009
[24] Frank, L. D., & Kavage, S., "Urban planning and public health: a story of separation and reconnection." *Journal of Public Health Management and Practice*, 2008, p. 214
[25] Litman, T., "Transportation and Public Health." *Annual Review of Public Health*, 2013
[26] Marshall, W. E., Piatkowski, D. P., & Garrick, N.W., "Community design, street networks, and public health." *Journal of Transport & Health*, 2014

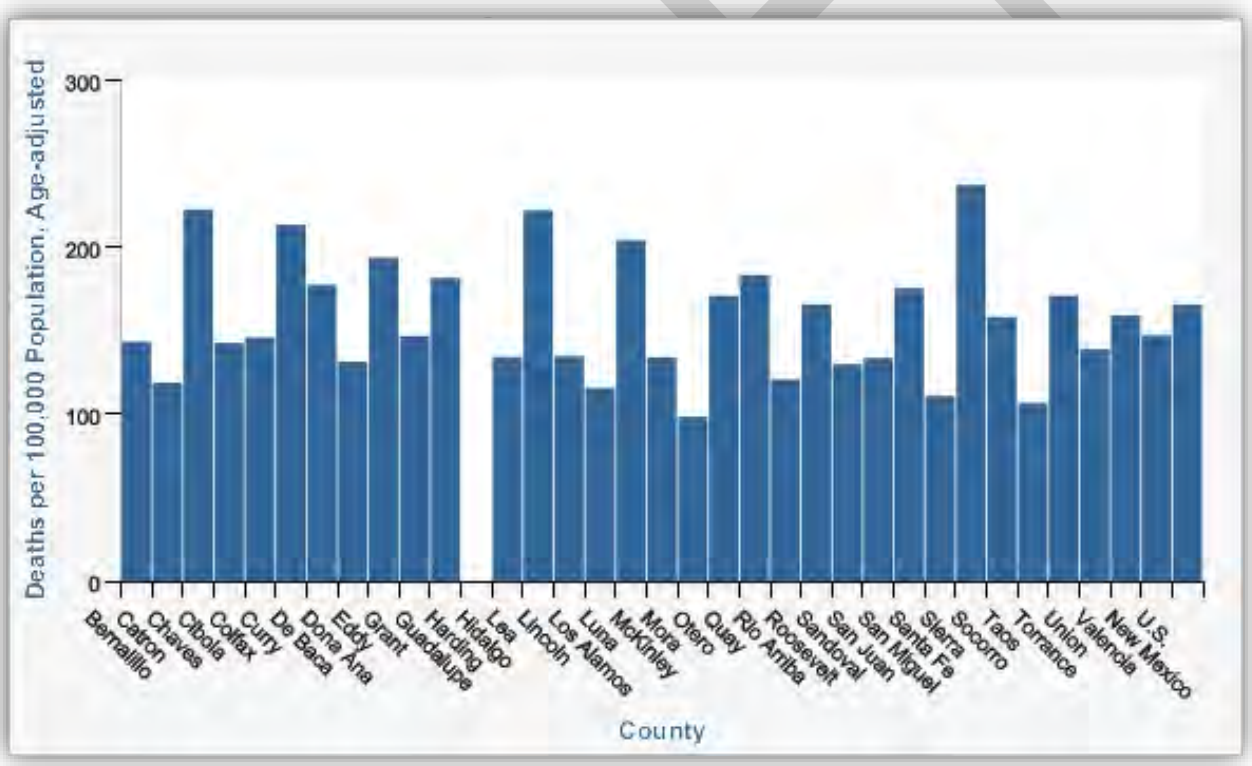
**Map 5-8: Connectivity Index by Local Lane Miles within Half Mile Grid Cells**



## a. Health Inequities

The CDC defines health inequity as "a difference or disparity in health outcomes that is systematic, avoidable, and unjust."[27] Health disparities are often analyzed by categories of race, ethnicity, and income, and health inequities clearly exist by these groupings in the region. As transportation is geographic in nature, analyzing geographic disparities in health may be most appropriate for determining how transportation planning can address related health issues. Data from the New Mexico Department of Health Bureau of Vital Records shows **clear disparities in the geographic distribution of the mortality from chronic diseases such as cardiovascular disease** shown in the map below. Over the last 10 years, heart disease has been responsible for an average of 3,406 deaths per year in New Mexico. In 2017, it accounted for 21 percent of all deaths in the state.[28] MRMPO is investigating the issues of health disparities in the region through a partnership with Presbyterian Health Care Services and the Bernalillo County Community Health Council as part of the Centers for Disease Control's Racial and Ethnic Approaches to Community Health (REACH) Healthy Here Initiative. Under the initiative, partners are working together across disciplines to address risk factors of poor nutrition, physical inactivity, and prevention, access to health care, and disease management related to chronic disease.

**Figure 5-15: Heart Disease Deaths per 100,000 Population by County, New Mexico, 2015-2017[29]**




[27] Centers for Disease Control and Prevention. "Social determinants of health." Retrieved Mon, 08 December 2014 from Web site: http://www.cdc.gov/socialdeterminants/Definitions.html

[28] New Mexico Department of Health (NMDOH)

[29] https://ibis.health.state.nm.us/indicator/complete_profile/CardioVasDiseaseHeartDeath.html

## b. Health Related Transportation Efforts

The *Futures 2040 MTP* established the connection between transportation conditions and health outcomes and identified analytical tools to make more this connection more evident. The *Connections 2040 MTP* expands on this connection and analysis. Further integrating health considerations into regional planning will require a range of efforts, including building coalitions with local public health professionals, collaboration between planning agencies and health organizations (when funding opportunities become available), improved technical analysis, and engaging community members about issues related to public health and transportation. Fortunately, a range of efforts are taking place across the AMPA that do take a more holistic approach to transportation planning. Following are a collection of ongoing efforts and potential strategies to improve public health outcomes through transportation planning.

### *Recent Public Health-Related Transportation Efforts*

- CiQlovía, Albuquerque's annual open streets event, temporarily closes different streets to promote bicycling, walking, and public health. MRMPO and the NM Complete Streets Leadership Team started the event in 2014 and continued to manage it through 2016. Starting in 2017, the event moved to a new neighborhood, the International District, and a new group of organizers representing that neighborhood and the public health community took on management of the event. MRMPO continues to support and promote the event.
- Healthy Here is an initiative among the Bernalillo County Community Health Council, Presbyterian Healthcare Services, the International District Healthy Communities Coalition (IDHCC), the Mid-Region Council of Governments. Healthy Here is working to change systems and environments to make it easier for Hispanic Latino, and Native American residents of the International District and the South Valley to access healthy foods, be physically active, and manage chronic disease. This work was done through a network of partners and stakeholders. Healthy Here was funded from 2014-2018 by the Center for Disease Control and Prevention's Racial and Ethnic Approaches to Community Health (REACH)program.
- Healthy Here Part 2: The Healthy Here Initiative and partners received a second CDC REACH grant. The project works toward improving health and reducing chronic disease disparities among Hispanic and Native American populations in Bernalillo County with efforts focused on three low income, high minority areas: The International District, South Valley, and the 2nd/4th Street Corridor. The project helps implement the Nutrition, Physical Activity, and Community Clinical Linkages Strategies in pursuit of the associated intermediate outcomes. These outcomes include an increased number of places that improve community design by connecting safe and accessible places for physical activity, and increasing the number of people with safe and accessible places for physical activity.
- An interdiscplinary team from the Albuquerque metro area was one of nine teams nationally selected to attend a 2018 Walkability Action Institute (WAI) training course in Decatur, GA in April 2018. The WAI, hosted by the National Association of Chronic Disease Directors (NACDD) and Centers for Disease Control and Prevention (CDC), is a multi-day "course" for interdisciplinary teams comprised of public health, transportation, planning, elected officials, and other disciplines. The team developed a Walkability Action Plan that included goals and action steps the region could follow for improving pedestrian conditions in the AMPA.

# 5.6 Pedestrian and Bicycle Programming

### *Land Use and Urban and Rural Design*

MRMPO encourages projects and programs that support active modes of transportation and active places. This includes not only addressing the safety and connectivity of the transportation system in order to make walking, biking, and transit more viable, but also promoting land use and design decisions required to make such active modes of transportation more attractive. Much of this work has been done through the development of the Long Range Transportation Systems (LRTS) Guide, and the Target Scenario, of which aspects have been implemented by local jurisdictions. This section provides information on active transportation-related policies, plans, programs, and projects that have been enacted since the adoption of the previous MTP in 2015. There has been considerable progress made in the region to support active transportation since the adoption of the *Futures 2040 MTP*.

## a. Local Pedestrian and Bicycle Plans and Projects

### *Policies and Ordinances*

#### *City of Albuquerque Complete Streets Ordinance*

In January 2015, the City of Albuquerque adopted a Complete Streets Ordinance. The ordinance aims to implement cost-effective improvements for multi-modal travel by taking advantage of opportunities as they arise during routine maintenance and street reconstruction projects. It also adopts, by reference, nationally-recognized standards for multi-modal facilities to complement existing standards in the City of Albuquerque's Development Process Manual, improves communication about street projects, and requires the City to consider multimodal level of service (MMLOS), rather than just conventional vehicle level of service (LOS), when working on larger roadway projects. Since the ordinance's adoption, there have been several successful complete streets and road diet projects completed.

The Complete Streets Ordinance was updated in August 2019. The update addresses equity measures for street design and project prioritization, strengthens language for project applicability, and reinforces language regarding exemptions from the ordinance.

#### *Shared Active Transportation Ordinance*

Albuquerque's City Council adopted a Shared Active Transportation Program Ordinance in the fall of 2018. Shared active transportation programs provide small vehicles such as bicycles, scooters, E-Bikes, e-scooters, or other small wheel vehicles, for rent to the public over short periods of time. Typically, trips on shared active transportation devices are short in distance and can serve as a tool to move away from single occupancy vehicle trips. Shared active transportation programs (such as bikeshares and scooter shares) are required to have a permit to operate in the City of Albuquerque. Currently, one e-scooter company is operating under a one-year pilot program. All users of these programs are required to follow state and local rules, and any rule that applies to bicycles also applies to e-scooters.

#### *No Parking in Bike Lane Ordinance*

As of December 19, 2018, stopping, standing, or parking in a bicycle lane is prohibited in the City of Albuquerque. The ordinance, which was recommended in the 2015 *Bikeways and Trails Facilities Plan*, supports the designation of bicycle lanes as travel lanes. The presence of motor vehicles in bike lanes is dangerous because it forces cyclists to confront vehicle traffic as they maneuver around the obstacles in the bicycle lane. Stopping, standing, or parking in a bike lane can result in a ticket.

#### *Downtown Walkability Analysis and Downtown Safe Zone Boundary*

In March 2015, the Downtown Walkability Analysis was adopted as a city policy for prioritizing multi-modal improvements in Downtown Albuquerque. This study was completed in the fall of 2014 by Jeff Speck, the author of *Walkable City: How Downtown Can Save America One Step at a Time.* This Downtown Walkability Analysis provided recommendations and rationale to improve walking and biking in the region's urban core. The plan identified several proposed projects and specifically recommended a 25 mph speed limit for the study area. The City of Albuquerque passed a resolution in March 2019 to create a Downtown Albuquerque Safe Zone, bounded by Lomas Boulevard to the north (but not including Lomas), the BNSF railroad tracks to the east, Coal Avenue to the south, and 8th Street to the west. The policy directs the City to identify transportation improvements for multimodal safety within this area. The policy sets the speed limit within the Safe Zone at 20 mph or lower. Speed limits signs have been replaced to reflect these new speed limit changes as well as adjustments to traffic signal timing. The policy also supports and prioritizes infrastructure improvements or alterations to streetscapes to support the 20mph limit.

### *Plans and Studies*

#### *Bernalillo County's Pedestrian Safety Action Plan*

This plan is a ten-year Rank 2 facility master plan. It includes an overview of existing bicycle and pedestrian related plans, studies, and ordinances, inventories existing facilities, and identifies and prioritizes future facility needs as well as policy changes. The plan is based on staff research, peer review, and community meetings in conjunction with the regional transportation plan. The existing conditions and inventories are evaluated by planning area and include health and safety concerns. Some of the recommendations that came out of this plan are a Complete Streets policy, pedestrian and bikeway projects, and improving coordination with partner agencies.

#### *City of Albuquerque's Bikeways and Trails Facility Plan*

The City of Albuquerque's *Bikeways and Trails Facility Plan* (BTFP) was adopted by the City Council in May 2015. The BTFP updated and combined the City's bikeways and trails plans into one resource. Combining these plans can help the City of Albuquerque improve overall network connectivity and provide better coordination and management of the growth of this system. The overarching plan purpose is to ensure a well-connected, enjoyable, and safe non-motorized transportation and recreation system throughout the metropolitan area. The BTFP reflects the desires of area residents to continue developing and improving a multi-use trail and bikeway network for commuting and recreational uses, as well as daily needs. The BTFP describes the existing system, policies, programs, recommendations, and proposed projects. This plan guides future investment in Albuquerque's bikeways and trails system, including facility improvements, new facilities, priority connections, maintenance, and education/outreach programs.

#### *Village of Los Lunas Bike Plan*

In August 2016, the Village of Los Lunas published their *Bicycle Master Plan*, signaling their intentions to improve the connectivity of existing bicycle infrastructure. The plan encourages bikeways where none had existed and provides a vison for active transportation for the Village to pursue. Bicycle treatments include a mix of multi-use paths, traditional bike lanes, and routes.

### *Bridge Boulevard Corridor Redevelopment Plan*

Bernalillo County's Bridge Boulevard Corridor Redevelopment Plan seeks to proactively couple increases in land use densities and employment opportunities along Bridge Boulevard. with key pedestrian, bicycle, and transit improvements. As one of a few urban river crossings, multimodal improvements to this corridor will be important for safety and connectivity. Five Points/Bridge Boulevard was identified as an Activity Center by MRMPO with a large potential for redevelopment for additional activity.

### *Walkability Action Plan*

A Walkability Action Plan was developed by an interdisciplinary team of health and transportation and elected officials from the Albuquerque metro area who were invited to participate in a training workshop in 2018. The Plan identified four goals to improve understanding of pedestrian issues and to improve conditions for pedestrians with action steps to achieve each goal.

### *ADA Transition Plans*

Section 504 of the Rehabilitation Act makes it illegal for the federal government, federal contractors and state and local governments receiving federal funds to discriminate on the basis of disability. It requires state and local governments to ensure persons with disabilities have equal access to any programs, services or activities receiving federal funding. This includes pedestrian facilities in the public right-of-way. It is imperative that local jurisdictions in the AMPA incorporate barrier removal into existing efforts and ensure that new facilities are built to meet ADA compliance standards. Most local jurisdictions in the AMPA have completed Americans with Disabilities Act, (ADA) Transition Plans that include a complete or partial inventory of pedestrian facilities in the public-right of-way and steps to ensure pedestrian facilities comply with the ADA.

The LRTS Guide provides street typology matrices and basic guidance on right-of-way set-asides meet ADA compliance standards generally but do not provide guidance for specific access requirements. Specific pedestrian improvement projects must refer to the New Mexico Department of Transportation's ADA Pedestrian Access Standard Drawings. These drawings conform to ADA requirements and provide guidance for compliance with the Proposed Accessibility Guidelines for Pedestrian facilities in the Public Right-Of-Way (PROWAG).

## ***Programs***

### *Bike Share Program*

Bike share is an element of the transportation system that consists of a network of stations where bikes are publicly available for short-term rental through several different fare options. Bike share trips are typically short distance and for a brief amount of time. The Downtown ABQ Main Street Initiative and MRCOG partnered to plan and implement a pilot bike share program in downtown Albuquerque, which launched on May 15, 2015, with 75 bikes and 15 stations. The pilot program also investigated the feasibility of a larger, more regional bike share system, which led to the Rio Metro Regional Transit District Executive Board's unanimous vote to approve expansion of the program.

In April 2018, Pace ABQ launched with 200 bikes and 30 stations. In June 2018, an additional 50 bikes and 10 stations were added to the system. As Rio Metro receives approval for public or private station locations, they are added in to the network. Rio Metro selected Zagster's Pace bike share program through a competitive request for proposals process. Pace is a hybrid approach to bike share. The system consists of designated stations where riders can reliabily and predicably check in or out bikes, but riders can also begin or end rides at any public bike rack.

Pace bikes feature a unique locking system to enable the bike to be locked to other racks. Rio Metro secured additional Transportation Alternative Program (TAP) federal funding to do an additional expansion of the system in 2019. The 2019 expansion included 250 additional bikes and 57 additional stations that were rolled out in waves throughout the year.

### *New Mexico Department of Transportation Everyday Counts (EDC-5)*

The New Mexico Department of Transportation is participating in the Everyday Counts -5, Safe Transportation for Every Pedestrain (STEP) program. The pedestrian fatality rate in New Mexico continues to trend upward, and in 2016 the state had the highest pedestrian fatality rate in the US. The New Mexico Department of Transportation recognizes the problem and is committed to developing a statewide pedestrian safety plan to identify and implement strategies to address the problem. The plan will come up with specific goals and a timeline for achieving those goals. The New Mexico Department of Transportation also participated in EDC-4 STEP program, which entailed developing the New Mexico Action Plan for Implementing Pedestrian Crossing Countermeasures at Uncontrolled Locations.

## ***Projects***

### *Silver Avenue Bicycle Boulevard*

The Silver Bicycle Boulevard from Yale Boulevard to Carlisle Boulevard was studied by the City of Albuquerque in 2015 to identify specific improvements that could benefit and better serve bicyclists. The study resulted in the relocation of stop signs, traffic calming tools such as traffic circles at intersections, redesign of on-street parking, and a bi-drectional protected lane on Carlisle to improve the crossing. Starting in summer 2018, the City of Albuquerque began to study the portion of Silver Avenue from Yale Boulevard to the Paseo Del Bosque Trail. This project will work to continue improvements and enhancements to this bicycle corridor and enable this corridor to serve a variety of bicycle riders with different levels of comfort. Additionally, this low stress corridor connects key centers and transit nodes.

### *Alameda Drain Trail*

Bernalillo County created a multiuse trail from north of I-40 to the Sandia Pueblo boundary. The project implements the Alameda Drain Plan, which is a multi-jurisdictional four-party agreement among Bernalillo County, the Middle Rio Grande Conservancy District (MRGCD), the City of Albuquerque, and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA). The project also integrates best management practices for stormwater runoff along the Alameda Drain corridor. This multiuse path will serve as a critical low-stress corridor for pedestrians and bicyclists between downtown and the North Valley. The project is not complete and will include an extension along 2nd Street.

### *Second Street SW Corridor Improvement Project*

Bernalillo County and the US Fish and Wildlife Service received Federal Lands Access Program (FLAP) funding to create a 1.5-mile multiuse trail adjacent to Second Street from the Valle de Oro Wildlife Refuge Viistor Center to the South Diversion Channel. The project also included a five foot sidewalk along the west side of Second Street SW from Camino Ocho SW to the South Diversion Channel (Mountain View Elementary School). A new pedestrian/bicycle bridge across the South Diversion Channel was built to connect this project with the Transportation Alternatives Program (TAP) project trail to the north. The Valle de Oro National Wildlife Refuge, the first such refuge in an urban area in the US Southwest, fulfills a goal of President Obama's America's Great Outdoors initiative to reconnect residents across the county to the natural environment. The refuge, once fully open to the public, anticipates at least 250,000 visitors per year.

### *Bernalillo Railroad Crossing*

The Town of Bernalillo constructed a new pedestrian crossing at the Downtown Bernalillo Rail Runner station. The closest existing crossing is approximately a mile away, at the US 550 station. The pedestrian crossing improves safety for locals who are known to cross the tracks to get to the other side of town. Construction on the bridge was completed in 2019. In the future, a second phase of the project will extend pathways around the bridge and enhance the markers that guide pedestrians.

#### *Dr. Martin Luther King Jr. Avenue Bike Lane Improvements*

A highly visible improvement to Albuquerque's bicycle network came in the form of bright-green thermoplastic buffered bike lanes installed along Dr. Martin Luther King Jr Avenue (MLK). The modifications to MLK greatly improve bicyclist safety and level of comfort along a key corridor connecting the University of New Mexico to downtown Albuquerque. The project intended to calm traffic by reducing the width of vehicle lanes from 13ft to 11ft. It also widened the existing bike lanes and provided a buffer from vehicle traffic. The design introduced bike boxes at major intersections to increase awareness of cyclists at intersection stops, provide a visible place for bicyclists to wait at intersections, and prevent vehicles from hitting bicyclists when turning right.

### *Indian School Undercrossing at the North Diversion Channel Trail*

Indian School is the one remaining at-grade crossing for the North Diversion Channel Trail, which is a multi-use trail that runs from Tucker Ave NE to the Albuquerque International Balloon Fiesta Park. This project will create an underpass under Indian School. The project is a collaboration among the City of Albuquerque Department of Municipal Development, Parks and Recreation, and Albuquerque Metropolitan Arroyo Flood Control Authority. The completion of the underpass will greatly improve the safety for bicycle commuters, recreational riders, runners, and pedestrians. It could also encourage more residents and visitors to use the nearly nine-mile trail to attend the Albuquerque International Balloon Fiesta via bicycle, which could help to reduce associated vehicle traffic challenges.

### *50-Mile Activity Loop*

As part of ABQ the Plan, the City of Albuquerque is building a 50-Mile Activity Loop. When completed the Loop will provide a contiguous network of trail and on-street facilities for walking, running and bicycling in an effort to increase quality of life for residents, enhance economic development opportunities, promote tourism, and spur private sector investments. The Activity Loop builds upon existing infrastructure, focuses on providing key connections that link important destinations and trails, and promotes health and wellness benefits for Albuquerque residents and visitors. The Activity Loop also travels through parts of the South Valley and the International District, two areas with disproportionately poor public health outcomes.

As of 2019, the Activity Loop is over 90percent complete. Crucial improvements made in 2018 include the connection of the Paseo Del Norte Trail to the Piedra Marcadas park trail on the west side of Coors Boulevard. and the connection of Silver Avenue's Bicycle Boulevard to the Paseo de Las Montañas trail. Project phases 6 and 7 will fill gaps in the southwest corner of the Activity Loop. In this area, the project was intertwined with the reconstruction of the Central-Unser intersection and redevelopment of the Bridge Boulevard corridor. The anticipated completion for this project is early 2021. There are several 50-Mile Activity Loop signs at different points around the city. An interactive map of the loop can be found here: https://www.cabq.gov/50-mile-activity-loop.

### *Albuquerque Rapid Transit (ART)*

The Albuquerque Rapid Transit project has a dedicated bus guideway through most of the nine-mile corridor that runs along Central Avenue. Construction began on the corridor in 2016 and bus service began in November 2019. Along with reimagining Central Avenue with premium bus service, according to the City of Albuquerque, over 1,000 individual ADA improvements were made along the corridor from Coors to Louisiana. Improvements include updating non-compliant curb ramps and drive pads, and the addition of pedestrian-scale lighting. Sidewalks throughout much of the corridor were also widened to six feet and street trees were planted, which has helped to create a more pedestrian-scaled environment throughout the corridor. Crash data and the High Fatal and Injury Network show that the Central Avenue corridor and several intersections are hotspots for crashes and fatalities – especially for pedestrians. It will be interesting to see if these improvements have created a safer environment not only for pedestrians, but for people using all modes.

### *HAWK Signals*

In the fall of 2015, the City of Albuquerque installed a High Intensity Cross Walk (HAWK) signal, or Pedestrian Hybrid Beacon, at the intersection of Lomas and Alvarado as part of the 50-mile Activity Loop. The three-bulb signal is designed to make it easier and safer for pedestrians and bicyclists to cross busy roads. HAWK signals are an FHWA proven safety countermeasure that have been shown to result in safety benefits such as a 69 percent reduction in pedestrian crashes, 29 percent reduction in total crashes, and 15 percent reduction in serious injury and fatal crashes[30]. The light mimics a stoplight where there otherwise wouldn't be one. When the signal is activated by a pedestrian, it shows flashing yellow, solid yellow, solid red, and then blinking red lights. As with traditional traffic lights, motorists should proceed with caution during yellow lights, stop on red lights, and may proceed after stopping if no one is in the crosswalk when the lights are flashing red. As part of the Albuquerque Rapid Transit (ART) project, five HAWK signals were added throughout the corridor at ART stations to enhance pedestrian accessibility. In addition, HAWKs have been installed at Louisiana and Nathalie in the Northeast Heights in Albuquerque and on Isleta Boulevard in Bernalillo County.



[30] https://safety.fhwa.dot.gov/provencountermeasures/ped_hybrid_beacon/